DOCUMENT RESUME

ED 042 108 AC 008 390

AUTHOR	Steuart, R. Calvert
TITLE	An Evaluation of the Educational Effectiveness of Selected ABE Materials.
INSTITUTION	Wisconsin State Board of Vocational, Technical, and Adult Education, Madison.
PUB DATE	68
NOTE	192p.
EDRS PRICE	EDRS Price MF-$0.75 HC-$9.70
DESCRIPTORS	Academic Achievement, *Adult Basic Education, Bibliographies, Check Lists, *English (Second Language), *Evaluation, Illiterate Adults, *Instructional Materials, Instructional Staff, Observation, Participant Characteristics, Post Testing, Pretests, *Reading Instruction, Spanish Speaking, Teaching Techniques
IDENTIFIERS	Mott Basic Language Skills Program, Sullivan Programmed Reading for Adults

ABSTRACT

Conducted in Wisconsin, this study evaluated two literacy programs--the Mott Basic Language Skills Program and the Sullivan "Programmed Reading for Adults"-- in order to develop a more effective adult basic education (ABE) curriculum. Attention was also given to relationships between selected student characteristics and measured improvement in reading abilities, component parts of the adult literacy systems and the relative effectiveness of components as judged in observations of student reactions and progress. Pretest and posttest measures of selected primary reading skills were given to 42 Spanish speaking, functionally illiterate adults who were learning English as a second language. Qualified ABE instructors were obtained who were not acquainted with or biased toward either the Mott or the Sullivan system, and who would teach them as independent and separate treatments. The Mott and the Sullivan system both proved effective in teaching the subject English as a second language. Motivation to learn, and initial speaking ability in English, were also highly significant to success. (The report includes a bibliography, 39 tables, observation forms, an evaluation checklist, and excerpts from Mott Basic Language Skills and the Sullivan programed reading system.) (LY)

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An Evaluation of the Educational Effectiveness of Selected ABE Materials

by

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1968

Research conducted under the guidance of

Wilson B. Thiede, Professor of Adult Education

The University of Wisconsin

In cooperation with the Wisconsin Board of Vocational Technical and Adult Education

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AC 008 390

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This research is dedicated to the ideas embodied in the following passage from the 1881 Yorktown Oration of Robert Charles Winthrop. His ideas, while fashioned for the education of an emancipated post-Civil War population, seem quite relevant to the challenges which presently face Adult Basic Education in the United States.

> "Slavery is but half abolished, emancipation is but half completed, while millions of freemen with votes in their hands are left without education. Justice to them, the welfare of the States in which they live, the safety of the whole Republic, the dignity of the elective franchise,--all alike demand that the still remaining bonds of ignorance shall be unloosed and broken, and the minds as well as the bodies of the emancipated go free."

ACKNOWLEDGMENTS

The author wishes to acknowledge the continued guidance and direction provided him by his major advisor in the doctoral program, Professor Wilson B. Thiede. It was with Professor Thiede's constant support and encouragement that this study was brought to completion. For the counsel and guidance provided by Professors Wayne Otto and James Duncan, the author is extremely grateful. They, together with Professor Thiede, composed the author's dissertation committee.

Special appreciation is extended to Miss Charlotte Martin, State Supervisor of Adult Basic Education, without whose cooperation this study would not have been possible. The author is deeply indebted to Isidro J. Villa, Coordinator of Adult Basic Education, Waukesha County Technical Institute and Howard E. Leslie, Coordinator of General Education, Kenosha Technical Institute, for their untiring and generous support of the author's research. Finally, the author is indebted to the ABE instructors who so willingly cooperated in conducting this research.

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CHAPTER ONE

INTRODUCTION

There is an increasing awareness within present-day society of the substantial numbers of unemployable adults, living in both urban and rural areas, who are unable to assume full and meaningful roles as citizens in this affluent society. This population of disadvantaged adults is often denied the opportunity of full participation in society because they lack the basic essentials of English literacy. Many of these disadvantaged adults are described as functionally illiterate. Functional literacy is rapidly becoming the prerequisite for most meaningful participation as a respected citizen in the United States. It has been prescribed as a prerequisite for participation in vocational training and retraining programs, thereby effectively eliminating much of the disadvantaged, functionally illiterate population. Increasing attention is being focused upon adult basic education and subsequent programs designed to meet the educational needs of the disadvantaged.

Purpose of the Study

The purpose of this study is to conduct an evaluation of selected adult basic education literacy materials to determine their educational effectiveness in teaching functionally illiterate adults to read. The theoretical basis for this research lies in curriculum development and evaluation. This study was developed on the premise that through the continuing cycle of evaluation, redesign, and re-evaluation, the educational effectiveness of curriculum materials can be substantially improved. The terminal objective of this study is to make a meaningful contribution to the development of a more educationally effective adult basic education literacy curriculum.

Objectives of the Study

With the purpose of the study in focus, the specific objectives of the study are as follows:

1. To determine the educational effectiveness of selected literacy program materials as used by adult basic education classes in increasing the reading abilities of functionally illiterate adults.

2. To investigate relationships between measured improvement of students' reading abilities and selected student characteristics.

3. To identify the component parts of the selected literacy program materials.

4. To determine the relative effectiveness of the component parts of the selected literacy program materials through systematic observation of the students in the teaching learning process.

   To determine specifically:

   a. the students' reaction to and acceptance of the component parts of the selected literacy programs.

   b. the degree to which the component parts of the selected literacy programs create within the students the desire to participate and learn in the teaching ⟷ learning process.

   c. the effectiveness of the individual component parts in teaching English as a second language to ABE students.

Why Adult Basic Education?

Adult Basic Education has only recently received nationwide recognition concerning the education of the under-educated and culturally deprived adult. It is a program that has only recently gained national prominence and acceptance by the educational community and owes much of its legitimization to the creation of the Office of Economic Opportunity and national funding of the "War on Poverty" programs. Adult Basic Education, is, however, the step-child to the established educational community and is involved in a life and death struggle for survival and growth. The program is aimed at equipping the functional illiterate with the basic skills that he needs in order to function as an acceptable member of today's society. Although no one would take issue with this general aim of adult basic education, there exists today a paucity of supporting elements to make it a dynamic part of the educational scene. Burnett advances this viewpoint when he states that the field of adult literacy has only pioneers. He further states, "In spite of the broad and colorful history of world literacy efforts, the art of teaching reading to illiterate American adults remains in an anemic state."[1] Training programs for teachers of functionally illiterate adults for the most part do not exist.

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[1] Richard W. Burnett, "Basic Literacy Projects for Adults: A Reading Specialists Comments," in Basic Education For The Disadvantaged Adult, ed. by Frank W. Lanning and Wesley A. Many (Boston: Houghton Mifflin Company, 1966), p. 236.

There is a great need for experimentally evaluated materials prepared especially for the functional illiterate. Research in ABE materials and media requires additional emphasis and financial support. It is to this need for research on adult basic education curriculum that this study purports to address itself.

Aqua focuses upon the current situation quite clearly when she states that in most cases, and especially for Spanish-speaking Americans, there are no recommended texts, but rather, a wide variety of suggested materials to be used as supplementary materials.[2] She further notes that although some educational materials have been prepared for the Spanish-speaking adult involved in the classroom situation, little or nothing has been developed for the non-academic adult who finds that he must become functionally literate in English in order to survive in his new cultural environment.

A philosophy widely subscribed to in adult basic education is that the curriculum should be designed to meet the most relevant needs of the adult student and to offer him assistance in developing the basic skills needed for adult living in society. Aqua identifies the basic skills most needed for adult living as Communication, Mathematics, Prevocational training, Community living and a Consumer education.[3] A schema illustrating the curriculum relationship of these needed skills can be found on the following page.

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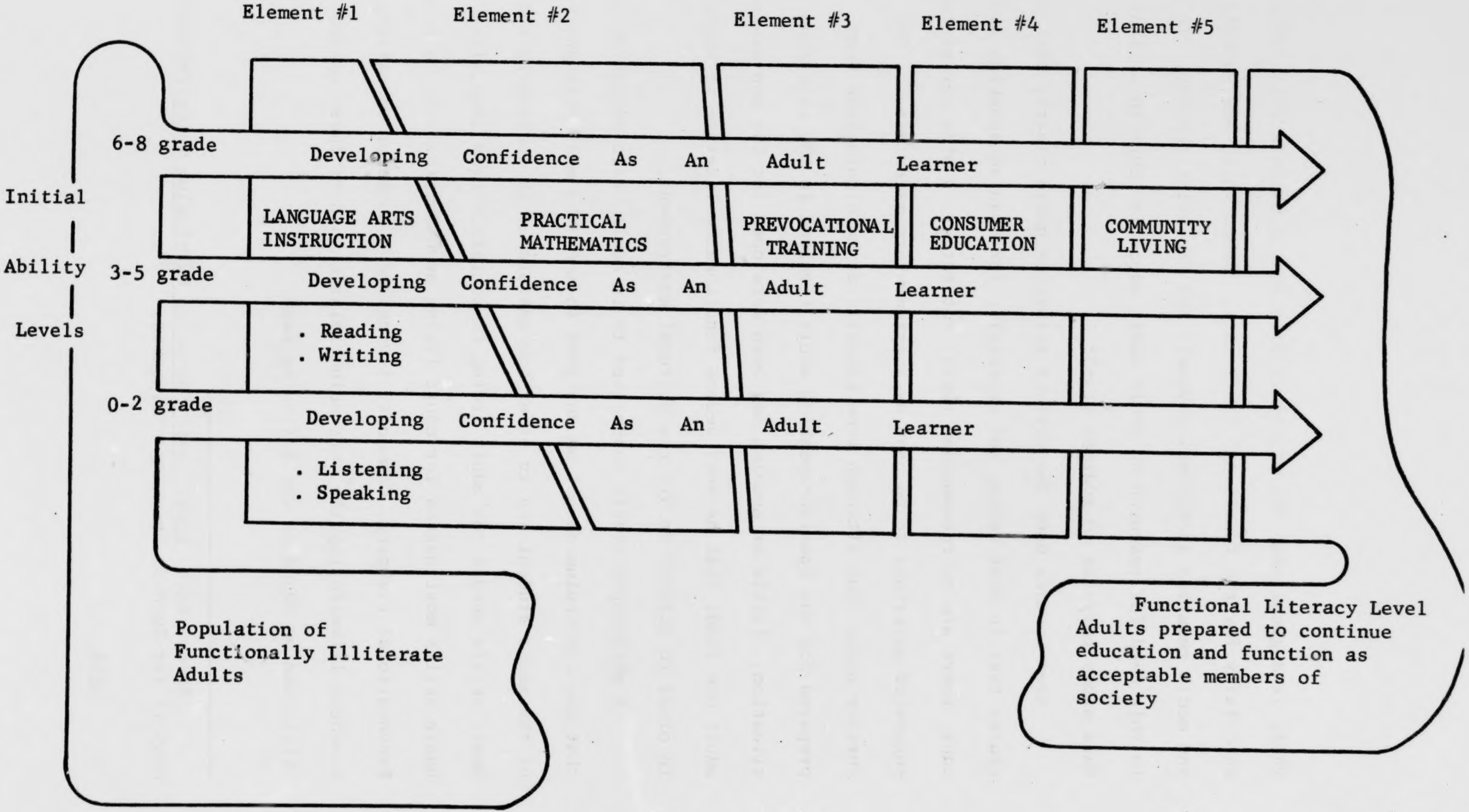
[2] Helena Aqua, Adult Basic Education Curriculum Guide (Milwaukee: Council for Spanish Speaking--Milwaukee, 1967).

[3] *Ibid.*

The Relationship of Adult Basic Education Curriculum Elements


Element #1
Element #2
Element #3
Element #4
Element #5
Initial
Ability
Levels
6-8 grade
Developing Confidence As An Adult Learner
LANGUAGE ARTS INSTRUCTION
PRACTICAL MATHEMATICS
PREVOCATIONAL TRAINING
CONSUMER EDUCATION
COMMUNITY LIVING
3-5 grade
Developing Confidence As An Adult Learner
. Reading
. Writing
0-2 grade
Developing Confidence As An Adult Learner
. Listening
. Speaking
Population of Functionally Illiterate Adults
Functional Literacy Level
Adults prepared to continue education and function as acceptable members of society

It is important that we realize that the functional illiterate is a product of his cultural and social milieu. The forces of socialization which maintain his presence in this disadvantaged state should be recognized and dealt with in the preparation of educational objectives, materials and priorities of concern. The aforementioned basic skills should be taught with the cultural milieu as a concomitant factor in the educational process.

The Culture of the Spanish-speaking American

Spanish-speaking Americans have recently gained attention on the national scene. Along with the emphasis given the Negro by the recent civil rights movement, the Spanish-speaking American has been transformed into an important element on the national scene, and for the purposes of this study, a recognizable element in the educational community.

Guzman has described the Spanish-speaking American population in the following manner.[4] The median school year completed by Spanish-speaking children is 8.5 in 1960 (as compared to Negro children completing 10.3 years of schooling). The adults, for the most part, qualify only for the pool of unskilled industrial labor. The population has a median age of under 28 years. There is virtually no participation by the population in local government, and consequently, a lack of understanding on the part of government concerning the cultural and economic deprivation of the population. Eighty percent of all Spanish-speaking Americans live in urban population centers. They have a slightly higher family income than the Negro population. Larger families, however, make the amount of income per family member less for the Spanish-speaking American than for any other group in the United States.

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[4] Ralph Guzman, "Mexican-Americans On the Move," Speech delivered to the Council for Spanish Speaking--Milwaukee, Milwaukee, Wisconsin, July 1966.

A major prerequisite for the ABE teacher in working with Spanish-speaking Americans is an understanding of the culture that has socialized these persons into an undereducated segment of society. The successful ABE teacher will possess an empathy for the student and be able to relate an English-speaking society to the Spanish-speaking Americans' cultural perspective.

The Adult Basic Education Student

The Spanish-speaking functional illiterate possesses many of the same general characteristics that are used to describe the average American adult illiterate. The following twelve common characteristics of adult illiterates describe most generally the type of person to be found in adult basic education programs.[5]

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[5] Howard W. Heding, et al., Missouri Adult Vocational-Literacy Materials Development Project (Columbia, Missouri: The University of Missouri, 1967), pp. 143-44.

1. The adult illiterate shows lack of training and practice in dealing with abstractions.
2. The adult illiterate lives for the present and exhibits a lack of orientation toward the future.
3. The adult illiterate often suffers from poor eyesight, loss of hearing, speech handicaps and other physical ailments.
4. The adult illiterate comes from a bi-lingual or foreign language speaking home.
5. The adult illiterate often shows poor or inadequate speech patterns and poor speech habits.
6. The adult illiterate usually is found among the lower socio-economic members of society.
7. The adult illiterate usually possesses below-average intelligence, although he may be in the average range.
8. The adult illiterate is usually highly motivated, although this motivation may vary in source and purpose.
9. The adult illiterate's ability to learn to read will generally not be affected by age, although the older adult may progress more slowly.
10. The adult illiterate often has a rural background, although he probably resides in an urban area.
11. The adult illiterate often is successful in hiding his inability to read with various excuses and confusion.
12. The adult illiterate has a much longer attention span than might be expected.

A.B.E. Literacy Materials

Aqua focuses upon a fundamental concern that appears in the literature regarding literacy materials when she states: "For a curriculum to meet specific needs it should reach each individual adult at the point at which he is now."[6] Using the aforementioned descriptive characteristics of illiterates as a reference point, the Missouri Literacy Project[7] developed the following suggested guidelines for content of literacy training materials and programs. The educational content should:

1. Have some reference to rural settings
2. Be multi-ethnic and contain no stereotypes
3. Be about real life situations, rather than fictitious, but should not be depressingly realistic
4. Show concern for family relations (since most illiterate adults are of a gemeinschaft family orientation)
5. Possess variety since adult illiterates are interested in everything
6. Be about topics of general interest to adults
7. Contain socially significant topics
8. Have a strong "father image"
9. Contain topics which will be of interest to women since they are in the majority in literacy training programs

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[6] Aqua, Curriculum Guide.

[7] Heding, Missouri Literacy Project, pp. 145-46.

10. Inform the adult illiterate how to avoid being taken unfair advantage of
11. Help the adult illiterate learn to manage his finances
12. Be able to be used in a neighborhood setting with a number of families or students involved
13. Provide the starting point for group discussion
14. Be contained in a series of smaller books rather than one large book to allow students a feeling of accomplishment and achievement.

There is a paucity of commercially produced materials in the United States that are specially prepared for a foreign-speaking population, in this case, the Spanish-speaking American population. Much of the materials that are currently being employed in the teaching of English as a second language in adult basic education are teacher-prepared and have not been effectively evaluated. Most of the commercially produced adult basic education materials presently being used for teaching English as a second language have not been prepared specifically for this use nor have they been submitted to any experimental evaluation for educational effectiveness. A rapid overview of materials currently available to the ABE market will give an overall perspective of a situation that Summers characterizes as being narrowly based and inappropriate for the needs of adults.[8]

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[8] Edward G. Summers, "Adult Basic Education: A New Dimension in Reading," Adult Leadership, Vol. XV, No. 1 (May, 1966), pp. 2-4.

Materials For Teaching Adults to Read

Otto and Ford identified nineteen publishers of ABE reading instruction materials in 1967 and submitted twenty-four reading programs to an extensive fifty question analysis.[9] Of the twenty-four programs examined by Otto and Ford, only two, according to their criteria, were "....suitable for (teaching) English as a second literate language class." In research conducted by Barnes and Hendrickson in 1965, twenty-five basic literacy instruction materials were described as being satisfactory for use with adult students. Of these twenty-five adult-oriented basic publications, only four were evaluated as being oriented towards the teaching of English as a second language.

It appears that no materials currently offered on the commercial market have a specific appeal to a foreign-speaking population of a particular foreign culture. This observation is substantiated by Spaulding who states that "publishers have not tried to produce materials specifically for segments of the illiterate market."[10] Spaulding elaborates further on this conclusion by remarking that the condition exists because adult basic education itself is completely disorganized.

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[9] Wayne Otto and David Ford, Teaching Adults To Read (Boston: Houghton Mifflin Company, 1967), p. 52.

[10] William Spaulding, et al., "A Review and Appraisal of Existing Instructional Materials for Adult Basic Education Programs," in Basic Education For the Disadvantaged Adult, ed. by Frank W. Lanning and Wesley A. Many (Boston: Houghton Mifflin Company, 1966),pp. 335-36.

Spaulding sees the following as reasons for disorganization:

1. no money exists with which to purchase materials
2. little potential market exists for materials and no hard market exists for the publishers
3. little is known about the potential market
4. little is known about the illiterate adult
5. the field is undecided as to what type of media to use for literacy instruction.

Similar observations concerning the current state of ABE literacy materials is made by Jewett, who concluded: "There is a serious shortage of materials for teaching basic reading skills, especially word recognition skills, to functionally illiterate or semi-literate adults."[11] Jewett further observes that few materials recently prepared for the primary grade levels of reading ability give a realistic picture of life for the culturally and economically disadvantaged populations, especially the Negro and Latin-American groups.

Particularly relevant to the purposes of this research is the recommendation made by Jewett,[12] and supported most enthusiastically by Aqua,[13] that before literacy materials are developed, a thorough survey and study be made of the adults who will profit by such courses in basic education and their culture. Materials should be oriented towards the aspects peculiar to the specific cultural socialization of the identified illiterate population. Jewett makes further recommendations for field-testing of ABE programs and subsequent revision before general distribution as educational materials.

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[11] Arno Jewett, _et al._, "Review and Appraisal of Materials," pp. 328-31.

[12] _Ibid_.

[13] Helena Aqua, private interview held at El Centro Hispano, Milwaukee, Wisconsin February 22, 1968.

Definition of Terms

Certain terms are used repeatedly in this study with specific meanings. Those terms are defined for the purposes of this study as follows:

Adult Basic Education. ABE An instructional program for the undereducated adult, geared to meet his specific needs and planned around those basic and specific skills most needed to help him function more adequately in today's society.

> Adult basic education is the foundation upon which any program to train and retrain large groups of unemployed adults must be built. It is both the door to vocational training and the path away from chronic social dependency, unemployment and personal deprivation. Like all education, basic education provides an opportunity for the citizens to engage in those fundamental cultural activities and creative endeavors which enrich life and which make it possible to function adequately in today's often frighteningly complex world. [14]

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[14] Harold W. Howe II, U.S. Commissioner of Education, Hearings before the House Subcommittee on Education on Title VI-B, Adult Basic Education, H.R. 3000, May 16, 1963.

Curriculum. A group of courses and planned experiences which a student has under the guidance of the school or program.

Literacy Materials. Educational materials produced for the expressed purpose of assisting illiterate and functionally illiterate adults achieve the basic requirements for satisfactory performance as a member of society.

Functional Illiteracy. The literature offers many attempts at defining functional illiteracy. Because of the diversity of opinion concerning what is and what is not illiteracy, a discussion of literacy and illiteracy definitions will precede the current meaning established for this study.

The Census Bureau deals with illiteracy in a straightforward definition by the use of number of years of formal education. The 1960 United States Census, using as a base figure the proportion of the national population eighteen years of age and older and with less than a sixth grade education, estimated that there are approximately 11.5 million adults with less than a minimum education.[15] The United States Office of Education takes the position that at least eight years of schooling constitutes the minimum education for literacy.[16]

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[15] U.S. Department of Commerce, Bureau of the Census, United States Census of Population: 1960, Vol. 1, General, Social and Economic Characteristics, P.C. series.

[16] U.S., Congress, House, Amendments to the Elementary and Secondary Education Act 1965, H.R. 13161, Public Law 89-750, 89th Congress, 2d sess., 1966, pp. 26-28.

Research projects and educational programs dealing with migrant and ex-migrant workers of Spanish descent consider an educational attainment level of seventh grade the borderline between social literacy and social illiteracy.[17] A leading publisher of adult basic educational materials, along with prominent educators in the field of literacy education, recognize less than a sixth grade education at eighteen years of age or older as indicative of functional illiteracy.[18]

Not included in the various definitions of functional illiteracy are the many adults who have remained in school for six, seven and eight years, but never have attained competence in the basic skills of reading and writing. Otto and Ford point out that years of schooling, while being a convenient criterion, is only a gross indicator of functional literacy.[19]

For the purposes of this research, the author will follow the tack of Otto and Ford in finding it most realistic to define functional illiteracy in terms of a lack of ability to function in everyday situations.[20] Fox takes the following approach in attempting to define illiteracy:[21]

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[17] Horacio Ullbarri, "Education of the Adult Migrant and Spanish Speaking Ex-migrant Worker," Adult Leadership, Vol. XV, No. 3 (September 1966), p. 81.

[18] Lois E. Burrill and Bjorn Karlsen, "Measurement of Progress," Normline Newsletter, Vol. 1, (New York: Harcourt, Brace and World, Inc., 1967).

[19] Otto and Ford, Teaching Adults To Read, p. 2.

[20] *Ibid.* 3.

> The illiterate adult in American society is that individual who does not have the necessary reading skills to make him eligible for vocational training when his marginal job in the labor market is discontinued. His lack of reading skills serves to make him and to keep him unemployable.

It is necessary to see functional illiteracy as a condition that exists between an individual and the society of which he is a part. We should recognize that society has various levels of occupational literacy requirements for satisfactory performance. These levels of performance vary directly with the occupational level and social level in which the individual finds himself. As Fox has suggested, however, vocational training and re-training will, in turn, impose a higher level of functional literacy upon the undereducated and thus may exclude them from the training programs and keep them in a disadvantaged position in the labor market.

For the purposes of this research, functional illiteracy can be defined as the inability of an adult to read and write with relative independence--independence that allows the adult to function satisfactorily in an occupation and that enables the adult to qualify for vocational training and advancement.

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[21] Esther Fox, "Considerations in Constructing A Basic Reading Program For Functionally Illiterate Adults," Adult Leadership, Vol. XIII, No. 1 (May 1964), p. 7.

Literacy Instruction With the Spanish-speaking Adult

A preceding section of the introduction reviewed the current availability of ABE educational materials. It was shown that few materials at present are designed to teach English as a second language and that there is a definite lack of instructional materials designed for specific language-bound or cultural-bound populations. The current paucity of materials for specific audiences leads Aqua to state:"....because of the lack of appropriate materials for non-academic Spanish adults, a great deal of materials used for the teaching of English as a second language will have to be teacher prepared."[22] It will be helpful in the concluding sections of this chapter to focus upon the specific functions required of literacy materials that purport to teach English as a second language to Spanish-speaking Americans. A rapid overview of the materials presently being utilized at the El Centro Hispano project of the Council for Spanish Speaking--Milwaukee will give the reader perspective into the needs for instructional materials used for specific audiences.[23]

The El Centro project uses commercially prepared materials, supplementary reading texts, audio and visual aids and student self-help materials. El Centro Hispano uses these instructional materials in the following manner in teaching functionally illiterate Spanish-speaking adults.

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[22] Helena Aqua, Adult Basic Education Curriculum Guide (Milwaukee: Council For Spanish Speaking--Milwaukee, 1967).

[23] *Ibid*.

1. English is taught as it is spoken--colloquial English, not literary English.
2. Spanish is used as little as possible.
3. Dialogue is made familiar until natural memorization occurs.
4. Basic patterns are drilled until responses become automatic.
5. Instruction proceeds in the following manner: Aural, Oral, Reading and Writing.
6. The teaching of vocabulary emphasizes both usage and meaning.
7. The teaching of the rules of grammar, for the most part, is found unnecessary and undesirable.
8. Pronounciation is corrected judiciously.
9. Evaluation exercises are conducted frequently.
10. Emphasis is given to short range educational goals and exercises that offer high motivation and reward.

Standardized Adult Basic Education Testing

A central requirement of any meaningful evaluation of ABE literacy materials is the use of valid and reliable standardized tests in analyzing student abilities. There are indications in the literature that suitable standardized tests that identify and measure the essential elements upon which cognitive development in the undereducated depends do not exist. Further attention is given to this area of standardized test materials in Chapter III. Available ABE testing materials are identified and analyzed in the subsequent development of a rationale for the selection of the evaluative measures necessary for this research.

Significance of the Study

Only recently have educators become aware of the presence of the functionally illiterate American, the "invisible man" who heretofore was believed not to exist. Through the impetus given educational programming and curriculum development by federal and state monies, we have seen in recent years a "discovery" of alarming numbers of illiterate adults who are educationally unprepared to assume first-class status in American society. Underlying this educational unpreparedness is the inability to read and write--a basic requirement for occupational and social success and self-respect. In responding to this deficiency, we have hastily prepared programs of remedial education and as is the case with most first efforts, found them to be less than adequate to accomplish the task that challenges the educational community.

As is also typical with many initial efforts, few of the present adult basic literacy materials have been closely examined and submitted to the continuing process of evaluation and redesign. As we progress into the technological age, the gravity of the adult illiterate problem will become greater and demand more sophisticated and effective remedial instructional materials.

It is perhaps difficult to conceive that in contemporary and affluent America adults participating in this research lack so elementary a skill as reading and writing the English language. These adults seem to be more often than not the chronic unemployed. We further realize that not much more than a small percentage of the illiterate population will learn and retain the ability to be effective readers. We further question the permanency of literacy training in light of present day efforts. Research such as is being conducted by the University of Wisconsin Library School points up the ineffectiveness of our current materials in sustaining literacy competence in the marginally literate adult student.[24]

We further recognize that the functionally illiterate adult is a product of his social and cultural milieu. The forces of socialization[25] that keep him disadvantaged and under-educated are beginning to be recognized as important factors in the development of ABE instructional materials and educational programs.

The significance of this study, then, will be in the evaluation of the educational effectiveness of selected adult basic education literacy materials in on-going adult literacy programs. Only through rigorous evaluation can ABE literacy materials be constantly improved and meet the challenge of lifting the yoke of illiteracy from the necks of over three million Americans.

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[24] The University of Wisconsin Library School, Research Proposal, Library Materials in Service to the Adult New Reader, (Madison, Wisconsin, January 29, 1968).

[25] Orville G. Brim, Jr., "Socialization Through The Life Cycle," (paper presented at the Conference on Socialization Through the Life Cycle, sponsored by the Social Science Research Council Committee, New York, May 16-18, 1963), p. 44.

CHAPTER TWO

REVIEW OF LITERATURE

The importance of adult basic education is rapidly becoming more widely recognized throughout the United States as the complex urban problems of unemployment and racial unrest call attention to an educational imbalance within our society. Adult basic education is being further looked upon by some as the panacea for much of the socio-economic problems that beset the undereducated and underprivileged sements of the U. S. population. It should be recognized, however, that adult basic education as it is presently being pursued is not equipped to bring remedial education to the masses of the population, nor is it capable of providing answers to the more pressing questions of the decade. A review of the literature in the field reveals that the attention given to basic and applied research in ABE has failed to match the tremendous emphasis now being placed upon this aspect of education. An overview of the programs currently being conducted in ABE reveals a conglomeration of "hit or miss" efforts with little coordination or continuity.

Well designed research is needed in ABE in areas such as adult learning and motivation, field testing of materials, teaching techniques, and teacher training. Well designed research that will point the way to a better understanding of the undereducated adult, his culture and his "society" is also needed in the related areas of anthropology and sociology.

The purpose of this chapter is to present an overview of the literature and research that is concerned with the development of adult basic education curriculum for literacy education. The specific ABE curriculum and evaluation areas which were reviewed were: reading and reading difficulty, adult reading interests, the culture of the functionally illiterate, and supporting legislation will be reviewed. It is not the purpose of this chapter, however to explore how adults learn or the characteristics of adult students. Much excellent literature exists in this area and is readily available to the adult educator. The present writer will attempt to focus on a conceptual analysis of reading and reading difficulty and arrive at an acceptable definition of reading in the following section of this chapter.

A Conceptual Analysis of Reading and Reading Difficulty

Examination of various definitions of reading reveals several conceptual issues. Wiener and Cromer identified four issues, the first being Identification versus Comprehension.[1] While identification is restricted to evaluation of what and how words are "said," comprehension is assessed by criteria such as the ability to paraphrase, abstract, and deal critically with communications. They do not necessarily imply each other. Identification in this context occurs without comprehension much more readily than comprehension occurs without identification.

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[1] Morton Wiener and Ward Cromer, "Reading and Reading Difficulty: A Conceptual Analysis," Harvard Educational Review, Vol. 37, No. 4 (Fall, 1967), pp. 620-43.

A second issue that emerges when considering definitions of reading is that of Acquisition versus Accomplished Reading.[2] Some definitions of reading associate acquisition skills with identification behavior and comprehension skills with accomplished reading behavior. This issue emerges in the confusion between the acquisition of reading skills, which may be the necessary antecedent to comprehension (as is identification), and the behavior produced by accomplished reading after these skills have been acquired.

Wiener and Cromer identify two additional issues concerned with definitions of reading. A third issue that emerges is Relative versus Absolute Criteria that are used for designating "good" reading. The use of relative criteria specifies comparison to some normative group, whereas the use of absolute criteria specifies the ability to read a certain number of words at a given rate at a specified level of comprehension. It should be recognized that "poor reading" may be used to describe vastly different forms of behavior. Research in reading may be influenced through the use of relative or absolute criteria in measurement.

The fourth and final issue identified by Wiener and Cromer is Reading versus Language Skills. The degree of emphasis placed upon already present auditory language in reading ability is a source of confusion. This issue emerges as the failure to identify the relationship between reading skills and previously acquired auditory language skills as they relate to reading problems and/or language problems.

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[2] Ibid., 629.

Educators assume that the functionally illiterate adult has reading difficulties. When the type of reading difficulty is considered, however, various conceptualizations and issues emerge to offer definition. Reading difficulties, according to Wiener and Cromer, can be conceptualized as follows:

1. Assumption of a defect--considers a reading difficulty as relatively permanent, where the difficulty is attributable to some malfunction in sensory-psychological functions.

2. Assumption of a deficiency--considers a reading difficulty as attributable to the absence of a function. A particular process or ability must be added before functional reading can occur.

3. Assumption of a difference--considers a reading difficulty to be remediable if the materials are consistent with particular behavior patterns. Reading difficulty occurs where there is incompatablity between the material being read and the response patterns of the individual.

The following model appears to be most popular in the literature in describing reading difficulty as an entity with several members, each having a single, unique cause.

> If A, then X_1; or if B, then X_2; or if C, then X_3 ....X_n.
> Where X_{1-n} represents different patterns of difficulty.

Wiener and Cromer elaborate on this model by introducing the variable of "sequence" into the conceptual scheme.[3]

> If A, then X_1 & if X_1, then B & if B, then X_2 & if X_2, then C & if C, then X_3 ....X_n.
>
> Where any member of the sequence is missing, evolution of the sequence would not be expected.

Consistent with the objectives of the present research with functionally illiterate adults, the following definition of reading seems to account most adequately for both reading and language activities.[4]

> We may define reading as the act of responding appropriately to printed symbols. For the beginner, reading is largely concerned with learning to recognize the symbols which represent spoken words. As proficiency in reading increases, the individual learns to adapt and vary his method of reading in accordance with his purposes for reading and the restrictions imposed by the nature of the material. As the learner achieves skills in the recognition side of reading, the reasoning side of reading becomes increasingly important. The nature of the reading task, therefore, changes as the learner progresses from less mature to more mature levels; reading is not one skill, but a large number of interrelated skills which develop gradually over a period of many years.

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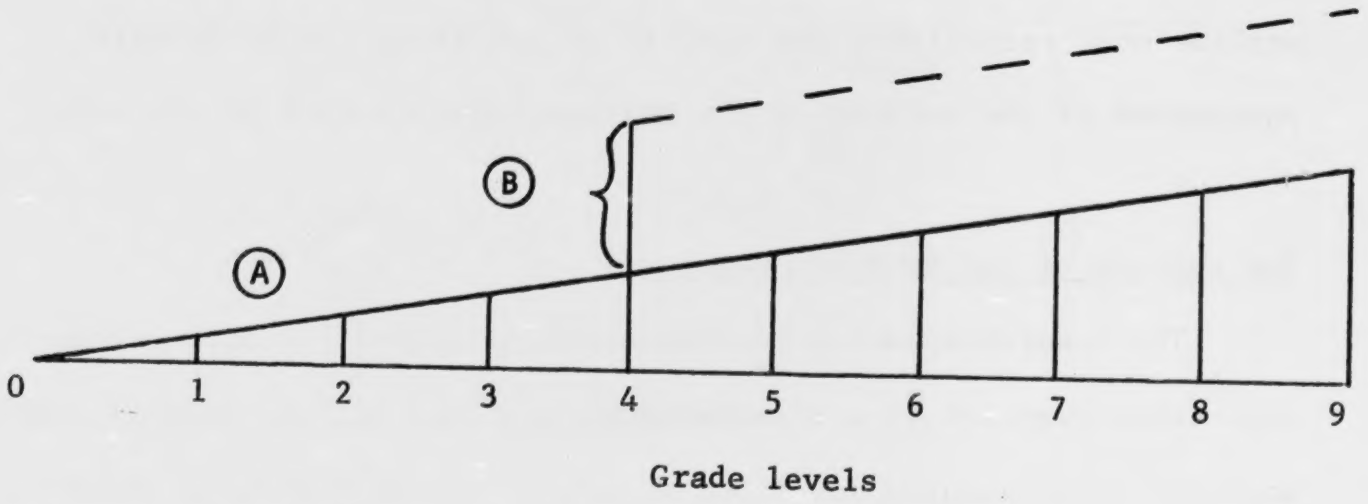
[3] Ibid., p. 633.

[4] A.J. Harris, How To Increase Reading Ability (London: Longmans, Green, 1948), p. 9.

A final concept that should be considered is the process of adult learning in reading instruction. Samolovcev points out that with adults, for the most part, the process of learning to read may not develop in a strict gradual sequence.[5] The ability to read may develop in spurts and leaps forward as cognitive processes in the adult find linkages and relationships with previously socialized behaviors and experiences. In a relationship such as the model below depicts, adult experience appears as an element in the learning process (as indicated by the 4 to 7 level jump), and may cast some doubt on the effectiveness of employing only strict sequentially programmed reading instruction for adults.



Ⓐ -- 1-2-3-4 gradual sequence of learning
Ⓑ -- 4 to 7 jump--cognitive processes connect with established behavior

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[5] Borivoj Samolovcev, Journal of Adult Education Yugoslavia, XII, pp. 83-85 quoted in Rose Mary Pattison, "The Evaluation and Selection of Adult Basic Education Program Materials" in Perspectives in Adult Basic Education for Administrators, ed. by Oswald H. Goering and Michael J. Stotts (Dekalb, Illinois: Northern Illinois University, 1967), pp. 59-67.

It should be recognized, however, that in mathematics and foreign language instruction, and perhaps English as a second language for Spanish-speaking Americans, a natural sequence and gradualism shapes the learning process.

The purpose of this section has been to establish a conceptual basis for reading and reading difficulties and to present an acceptable definition of reading. Very little research in ABE is concerned with the Mexican-American as a functionally illiterate person. There are specific aspects of the Mexican-American culture, however, that play a decisive role in the education and resocialization of the Spanish-speaking American. One should be aware of this cultural phenomen and the effect that it has upon adult basic education efforts in order to utilize most effectively the results of research. It is to this phenomenon of the culture of the Mexican-American that we now turn.

The Culture of the Mexican-American

The Spanish-speaking Mexican-American migrant or native-born is more often than not in a disadvantaged position in U.S. society. His position is poignantly described by Smiley in the following characterization:[6]

> A disproportionate number of underprivileged come from families in which English is not their native

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[6] Marjorie B. Smiley, "Objectives of Educational Programs for the Educationally Retarded and Disadvantaged," The Educationally Retarded and Disadvantaged, Sixty-sixth Yearbook of the National Society for the Study of Education, Part I (Chicago: National Society for the Study of Education, 1967), p. 131.

> language or tongue or come from families whose native English is characterized by differences in vocabulary, syntax and para-linguistic features -- in both cases, the person is marked as undereducated and lower class in the eyes and ears of their more privileged fellow citizens.

According to the proceedings of a recent conference that confronted this problem of the education of racial minorities,[7] it was estimated that there are 3,842,000 Mexican-Americans living in the United States. In 1960, ninety per cent maintained residence in five Southwestern states. Jones describes the culture of the Mexican-American by saying that "The greatest problem in the Mexican-American community is education, not racial discrimination."[8] Cultural differences impede education and economic advances on the part of these citizens. The 1960 education census gives the following overview of median years of schooling completed for foreign-born Spanish-surname males:

3.8 years of school for urban residents
1.5 years of school for rural non-farm residents
2.4 years of school for rural farm residents

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[7] Conference held at The University of Wisconsin, May 11-12, 1967, sponsored by the Center for Studies in Vocational and Technical Education.

[8] Lamar B. Jones, "Education and Training of Mexican Americans: Problems and Prospects," in The Education and Training of Racial Minorities, (Madison: Center for Studies in Vocational and Technical Education, 1968), p. 110.

The apparent disadvantaged position of the Mexican-American is more fully understood when one realizes that upon arrival in the United States he:

1. competes for unskilled jobs
2. reinforces cultural and social factors of the old world
3. adds to the burden of the glutted unskilled labor market
4. acts as a carrier of the parent culture
5. is a powerful force in preventing change in the Mexican-American community.

There are two extremely important internal variables which serve to reinforce the nonchange attitude of the Mexican-American culture. The focal values of the concepts of "La Raza" and the "joint family" emerge as dominant determinants, both relying on the use of Spanish as the essential tongue of social life. "La Raza" or "the race" is described by Jones[9] as the cultural and spiritual bond uniting all Spanish-speaking peoples. This concept causes adult basic education to be ineffective for the Mexican-American community by depicting 1) a physical world not amenable to change, 2) a time perspective oriented to the present, and 3) a non-competitive attitude between individuals. The concept of the "joint family" further relegates ABE to an ineffective position in the Mexican-American community by maintaining 1) group rather than individual decisions, 2) experience as the best guide, and 3) an age and sex hierarchy in decision-making. The Mexican-American is, therefore, effectively prevented from assimilating the success criteria of the Anglo-Saxon society of which he is a part.

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[9] _Ibid_., p. 112.

With this perspective of the Mexican-American culture as a reference point, Ulibarri suggests the following curriculum for ABE programs for Spanish-speaking Americans.[10]

1. Family living subjects
2. Basic education subjects
3. Occupational skills
4. Americanization or acculturation subjects.

He suggests further that the acculturation efforts within the ABE program should be one of the strongest aspects of the total ABE effort. Through his participation in ABE programs, the Mexican-American should come to think of himself as a contributing member of American society. From a study of migrant workers, Ulibarri recommends six principles to guide the development of ABE programs.

1. Objectives (long-range in scope) should be presented to the particpant in piece-meal fashion for adequate understanding.
2. Objectives should be formulated in long-range terms, but presented in very simple terms.
3. Objectives should be defined in such manner that they minimize cultural and/or attitudinal conflict.

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[10] Horacio Ulibarri, "Education of the Adult Spanish-Speaking Migrant and Ex-Migrant Worker," Adult Leadership, Vol. XV, No. 3 (September, 1966), pp. 80-82.

4. Objectives should involve the total nuclear family or joint family unit in as many areas as possible.
5. ABE objectives should be coordinated as closely as possible with the school program for the children of the nuclear family.
6. Objectives should be community-wide in scope, involving many agencies according to their area of specialization.

It must be remembered that Spanish is the focal point of the Mexican-American culture. So many of the citizens of this culture are alienated towards educational programs, including ABE efforts, postulates Jones, due to the failure of the "all-or-nothing" approach in teaching English in the public elementary and secondary school.[11] A conflict of values is evident in the Mexican-American culture, this conflict being effectively supported by a lack of bilingual instruction in schools and the competitive nature of public school education.

It is evident that adult basic education programs should be designed to maintain several program directions if these programs are expected to effect the assimilation of the Mexican-American into the mainstream of American life. The term "Mexican-American" should be made meaningless as acculturation is achieved. A common medium of English should be injected into "La Raza." The new technique of bilingual instruction should be viewed as instrumental both for achieving acculturation of the ABE student and for realizing the utilization of his potential as a member of society.

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[11] Jones, Racial Minorities, p. 115.

It is within this context of acculturation that adult basic education finds itself involved, and in most cases unable to become effectively involved, with Mexican-American society. One of the more successful ventures for adult basic education has been in literacy training in the United States Army. The program for literacy instruction, as part of the resocialization effort with functionally illiterate army recruits, will be reviewed in the following section of this chapter.

Literacy Training in the U. S. Army

A review of the literature concerning literacy training programs reveals that only the United States Army has conducted programs giving specific consideration to long term planning, sequence, continuity and evaluation. The literacy efforts of the U. S. Army have been well documented by Goldberg in his book, Army Training of Illiterates in World War II.[12] Between July 1941 and September 1945, 3,063 men were routed through U. S. Army Special Training Units at Replacement Training Centers for remedial literacy instruction. Of this total, 94 per cent were salvaged who otherwise would have been discharged as unfit for service. Sixty-one per cent of the men were consequently assigned for general duty, 33 per cent were assigned for limited duty and 6 per cent were discharged as unfit for service.

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[12] Samuel Goldberg, Army Training of Illiterates in World War II, (New York: Teachers College, Columbia University, 1951).

The results achieved by this literacy training effort seem to be more highly significant than many of their latter-day counterparts. There are several reasons for this high rate of success in literacy training. One result that is significant is that of the 1,500-plus trainees entering the program at the first grade reading level, 62 per cent were taught to read at a fourth grade or greater level of competency in twelve to sixteen weeks of instruction. It will be of interest to note, however, that non-English-speaking trainees were usually unable to achieve the literacy standards in the allotted time period.

Goldberg offers the following five reasons why the Army literacy program was successful. These five factors are almost always absent in civilian counterparts of the Army literacy program. The U.S. Army:

1. maintained high motivation of students (men desire to learn to read and write so they can communicate with loved ones while away from home)
2. maintained control over the students twenty-four hours a day
3. maintained unlimited funds for programs
4. maintained availability of qualified instructors and supervisors
5. offered new programs utilizing only the best methods and materials that were available.

U. S. Army Special Training Units produced a variety of training materials in their four year existence. The primary instructional text utilized initially in literacy classes was Army Life, published as a technical manual. It contained four subsections known as the "Private Pete Series." A second basic literacy text more closely approximated what we now know as instructional materials for ABE. It contained:

1. a series of reading units
2. appropriately illustrated reading units with drill exercises
3. requirements for students to write newly acquired words
4. review exercises interspersed throughout the text
5. glossary of 309 words at the end of the text (military terms).

There are several special characteristics of the Army literacy program that deserve special mention. At each grade level there were established standards of performance. These standards of performance were modified, however, by a provision for differential rates of progress for selected trainees. A review of the curriculum developed for this program reveals that it was of an all-inclusive nature. Army trainees assigned to the Special Training Units were truly "immersed" in the training exercises and activities for twelve to sixteen weeks. An average class size of fifteen students was maintained. Evaluation within the Special Training Units is worthy of mention. A continuous psychological study of the trainees was maintained by qualified personnel, as was an on-going appraisal of the educational effectiveness of the training. This type of evaluation was made possible by the almost unlimited resources made available by the United States Army.

The outstanding success of the special training program demonstrated that adult illiteracy need not continue as a static cultural problem if the proper educational procedures are followed. In addition to the characteristics of the special training programs already mentioned, some of which would be difficult to implement in civilian programs, the success emphasized the validity of certain principles of teaching and learning with the undereducated person. The Army literacy program revealed:

1. the validity of using functional materials and methods
2. the value of establishing clear educational objectives and goals
3. the value of keeping a class small
4. the importance of strong interest and motivation to the learning process
5. the value of using visual aids in the learning process
6. the importance of correlating activities and subject matter
7. the value of the use of supplementary teaching materials and applicatory exercises.

A second U. S. Army remedial program was involved in an experimental evaluation by Goffard in 1956.[13] This study was designed to evaluate experimentally the effects of a period of "prebasic training" with marginally illiterate men. Three types of specialized training were administered during a three week period to the experimental groups.

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[13] S. James Goffard, An Experimental Evaluation of a Basic Education Program in the Army, (Washington: Human Resources Research Office, George Washington University, 1956).

Each of the three "prebasic groups" received one of the following treatments:

1. Instruction in the academic skills of reading, writing and mathematics
2. Instruction in basic military skills only
3. Instruction where academic skills and military skills were emphasized equally.

The subsequent evaluation of these three prebasic instruction periods produced negligible results. There was only slight improvement by the Army recruits in both performance proficiency and writing and reading proficiency. The conclusion reached by Goffard is perhaps of greater value to the adult basic educator than one might imagine. He concluded that specialized prebasic training should be developed in broad psychological or clinical terms to be more effective. This conclusion supports the recent recommendations made by Ulibarri in the previous section of this chapter concerning family living subjects and acculturation subjects in ABE programs.

There seems to be an increasing awareness on the part of adult educators that ABE programs must offer more than basic school subjects to be of benefit to the disadvantaged adult. Consideration for the resocialization role of adult basic education is characteristic of the more successful ABE programs today. Excellent examples of this emphasis on the total life space of the adult can be found in the Special Projects Reports presented at the National Conference on

Adult Basic Education.[14]

To present a complete picture of the scope of the literature regarding adult reading and adult literacy, some attention should be focused on the early survey studies concerned with adult reading. These studies, although not experimental nor evaluative in nature, do provide a background for understanding the nature of adult reading.

Studies of Adult Reading and Reading Interests

It was estimated by Francis Gregory in 1964 that there existed some thirty-one million Americans who were educationally disadvantaged: "one million are totally illiterate, ten million are semiliterate, and twenty million, although literate, do not have educational qualifications to compete in today's labor market."[15]

The first serious attempts to explore the reading patterns and interests of adults were through the efforts of Guy Thomas Buswell in 1937.[16] In studying a sample of the adult population of the United States, Buswell documented the relationship existing between amount of education and ability to read.[17] Within each education level he surveyed, he also found a wide range of reading ability. As a side comment on the quality of Negro education in the United States, Buswell found that within the same education level the Negro citizen consistently scored lower than the white citizen in reading ability. An additional relationship documented in this initial study was a positive one between amount of reading done by adults and highest grade attended in school.

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[14] The second National Conference on Adult Basic Education was held in San Antonio, Texas, April 15-19, 1968, co-sponsored by the United States Office of Education and the National University Extension Association.

[15] Francis A. Gregory, "The Undereducated Man," Education Digest, Vol. XXX (December, 1964), p. 39.

[16] Guy Thomas Buswell, "How Adults Read," School Review, No. 45 (August, 1937).

[17] Ibid., p. 32.

A forerunner of today's more valid indices[18] was a study conducted before Buswell's early efforts and was concerned with difficulty of reading materials. Dale and Tyler developed the following simplified criteria and equation for assessing the difficulty of reading materials:[19]

1. Count the number of different technical words
2. Count the number of different hard non-technical words
3. Count the number of indeterminate clauses.

Dale and Tyler reported the development of a multiple regression equation that enables the lay worker to estimate the difficulty of reading materials.

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[18] See the Sixty-seventh Yearbook of the National Society for the Study of Education, Part II, Innovation and Change in Reading Instruction, ed. by Helen M. Robinson (Chicago: National Society for the Study of Education, 1968).

[19] Edgar Dale and Ralph W. Tyler, "A Study of Factors Influencing the Difficulty of Reading Materials For Adults of Limited Reading Ability," Library Quarterly, Vol. VI (July, 1934), pp. 384-412.

Until recent years the largest effort devoted to adult reading and the problems associated with it was the National Society for the Study of Education 1956 Yearbook--Adult Reading.[20] This Yearbook contains ten essays by leading authorities in reading in 1956. It is important to note that it does not specifically mention "remedial" or "adult basic" education, nor do any of the ten essays concern themselves with teaching illiterate adults to read. The earlier and rather well publicized results of the U.S. Army literacy training program merit only a several-paragraph mention. It is evident that even as late as 1956, the problem of adult illiteracy was neither recognized nor spoken to by the leading educators in the field of reading. The solution to the problem of adult illiteracy was approached in this publication only by Witty, and then in a rather brief manner, in his suggestion that the public schools assume the important obligation of "...teaching reading to all children and youth so efficiently that functional illiteracy will be virtually unknown among the adult population of the future."[21] Witty did make the recommendation, however, that a nationwide civilian program of literacy education should be initiated.

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[20] Nelson B. Henry, ed., Adult Reading, Fifty-fifth Yearbook of the National Society for the Study of Education, Part II (Chicago: National Society for the Study of Education, 1956).

[21] Paul A. Witty, "The Improvement of Reading Abilities," in Adult Reading, ed. by Nelson B. Henry, Fifty-fifth Yearbook of the National Society for the Study of Education, Part II (Chicago: National Society for the Study of Education, 1956) p. 251.

Asheim, writing in the NSSE 1956 Yearbook, observed that education is the major correlate of reading ability and reading activity.[22] Within the other variable groupings of age, occupation and economic status, education is observed to be the hidden factor.

In a rather recent study of penal institutions, Cortright found that a large percentage of prisoners are poor readers.[23] In the Maryland State Penitentiary in 1965, seventy per cent of adult inmates were functionally illiterate and ninety-eight per cent were high school dropouts. These findings vividly illustrate the need for remedial education in penal rehabilitation programs.

The scope of these early studies points out the paucity of the research background for present-day ABE efforts. Later sections of this chapter will present more recent experimental research efforts in literacy training and will attempt to pull together some of the results of unrelated literacy studies.

Field Tests of ABE Literacy Materials

There are only three evaluative research projects in the emerging discipline of adult education that could be conscientiously considered as experimental field tests. A number of other studies are involved with the evaluation of ABE materials by an internally developed criterion or by a panel of "experts," but these cannot be considered experimental in nature. The following section of this chapter will consider the evaluative-type of ABE study.

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[22] Lester Asheim, "What Do Adults Read?," in Adult Reading, p. 9.

[23] Richard Cortright, "Inmate Illiteracy," Journal of Reading, Vol. VIII, No. 14 (January, 1965), pp. 36-38.

The most widely recognized field test of ABE literacy materials was conducted by Greenleigh and Associates in 1964.[24] The purpose of the research project was to evaluate the effectiveness of selected ABE literacy systems with economically dependent adults. The field test was conducted in three states and involved an initial population of 1815 public assistance recipients aged eighteen years or over who were at or below a fifth grade level of reading competency. Thirty-six classes of fifteen students were organized. Although a control group was initially desired, the researchers were unable to acquire a sufficient number of adults to comprise the group.

Teachers were stratified for this experiment by levels of preparation: teacher certification, college graduation, and high school graduation. Four ABE reading systems were selected from a list of twenty:

1) "Learning to Read and Spell" (American Incentive to Read),
2) "Reading in High Gear" (Science Research Associates, Inc.),
3) "The Mott Basic Language Skills Program" (Allied Education Council), and
4) "Systems For Success" (Follett Publishing Company).

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[24] Greenleigh and Associates, Inc., Field Test and Evaluation of Selected Adult Basic Education Systems (New York: Greenleigh and Associates, Inc., 1966).

Three tests were used to assess the progress made by the participants in the field test: The Bender-Gestalt perceptual-motor skills test, Gray's Oral Reading Paragraphs and The Wechsler Vocabulary test.

A total of 64 per cent of the initial population were retained in the experiment for the seventeen week duration. The significant findings of the research listed below are followed with critical comment concerning the research design and evaluation procedures.

> 1. Almost all students showed some gain in reading ability during the field test. There were no significant differences, however, in student gain scores by reading system.
>
> 2. No significant differences in gain scores were found from the first to the final Gray Oral Test by level of teacher preparation.
>
> 3. Highly significant correlations existed between the final Gray test scores and gain scores, but no correlations [sic] existed between initial Gray test scores and gain scores.
>
> 4. Students who scored the highest [on the pretest] made the most amount of gain; amount of gain, however, was not predictable from initial test scores.[25]

A critical review of this field test was offered by Griffith.[26] Random selection of participants was lacking in this research design, as was a true population of teachers from which the final selections were made. The research should be further criticized for weakness in design because of the failure to provide for a control group. In reviewing the twenty general findings of the research, one finds that thirteen of these fall into the category of observations or subjective generalizations and can claim no statistical validity. This research is of considerable value, nevertheless, for as Griffiths states "...within this report the careful reader will find some information on virtually every variable which must be considered in rigorous research on adult basic education."[27]

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[25] Ibid., p. 15.

[26] William S. Griffith, "Book Reviews," Adult Education, Vol. XVIII, No. 2 (Winter, 1967), pp. 119-125.

A study conducted in Missouri and in part quite similar to this author's present research is the Missouri Adult Vocational-Literacy Materials Development Project.[28] The purpose of this project was to develop basic and intermediate reading, writing and spelling materials for illiterate adults using the initial teaching alphabet (i.t.a.) jointly with traditional orthography (t.o.). The project consisted of a research phase, a materials development phase and an evaluation phase.

The research phase of the project, with reference to the functionally illiterate, determined: 1) basic and social needs, 2) personal and social characteristics, and 3) levels of literacy. The instruments used for the acquisition of information were surveys, interviews, questionnaires and small group in-depth studies.

The materials development phase of the project developed materials at three levels of difficulty. These levels were designed to provide a transition for the student from an i.t.a. teaching format in the primary materials to a t.o. teaching format in the intermediate and more advanced materials.

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[27] Ibid., p. 124.

[28] Howard W. Heding, director, Missouri Adult Vocational-Literacy Materials Development Project, Project No. 034-65 (Columbia, Missouri: University of Missouri and the United States Department of Health, Education and Welfare, 1967).

The evaluation phase of the project was designed to test the effectiveness of the developed materials and discover and document indigenous strengths and weaknesses. The experimental classes were conducted for a four month period in urban Missouri population centers. Of a total of thirty-four adults initially enrolled in the experiment, eighteen or 52.9 per cent remained for the posttest measure of achievement. The pretest-posttest measure consisted of student scores on four dependent variables: 1) word meaning, 2) paragraph meaning, 3) spelling, and 4) word study skills.

For the most part, the results of this study closely approximate those of the Greenleigh field test. The only significant result between pretest and posttest scores was in student performance on the spelling variable. Student gains after up to ninety hours of literacy instruction were negligible on the remaining three variables.

The limitations of this experimental study seem to typify those commonly found in evaluations of ABE instructional materials and bear mention. The research was severely limited in respect to instructional materials, in this case, testing only materials that incorporated the unique characteristics of i.t.a. instruction. At the time of the posttest the classes of adults were at different levels of instruction with regard to both total hours of instruction and teaching materials used. A third limitation of the research, which is commonly found in research involving illiterate adults, was that random selection of the population was not utilized. At the time of posttest the experimental groups were of unequal size, which violates the statistical requirements of equinormality. An additional limitation of the research that seriously threatens its generalizability was the use of inexperienced teachers with the adult classes. Research that involves small groups, as this study does, without strict adherence to both random selection and assignment of participants, produces results of questionable validity.

A third research effort that could be categorized as experimental in design was conducted by Krebs in 1966. The study extended over a twelve month period and was designed to research the teaching of reading skills to illiterate adults (at or below a sixth grade reading level). The adults were randomly assigned to treatment groups that received either a small group programmed system of reading instruction or an electic system of instruction using volunteer tutors on a one-to-one relationship. The adults were pretested, tested after fifty hours of instruction, and again after one hundred hours of instruction.

It is apparent with this research, as with the Greenleigh and Missouri studies, the uncontrolled variables of inexperienced teachers, teacher effectiveness, small group interaction, and lack of random selection of the population seriously threaten the generalizability and validity of the findings.

Only three studies were located for this review that could be considered as experimental in design. It is therefore well recommended in much of the literature that a high priority be given to correcting this weakness in research base that is seen by Olsen as currently plaguing adult basic education.[29]

Several well documented collections of available ABE materials presently exist. As is usually the case with these collections, they appear as "annotated bibliographies," and use subjective criteria to rate the teaching materials. An overview of these efforts is presented in the following section of this chapter.

Materials Analysis and Appraisal

Three appraisals of published ABE materials are examined in this section. Barnes and Hendrickson published the initial appraisal in 1965 by categorizing available ABE materials for teaching adult illiterates into three instructional levels.[30] Level I is a basic instruction period for teaching the fundamentals of reading. Level II is an accelerated growth period approaching functional literacy. Level III is a period of developing maturity where reading is used for occupational and leisure-time activities. Barnes and Hendrickson identified eighteen published sets of instructional materials for

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[29] James Olsen, "Instruction Materials for Functionally Illiterate Adults," Adult Leadership, Vol. XIII, No. 4 (March, 1965), pp. 275-76.

[30] Robert F. Barnes and Andrew Henderickson, Graded Materials For Teaching Adult Illiterates (Columbus, Ohio: The Ohio State University Center for Adult Education, 1965).

Level I, ten sets of published materials for Level II, and found an absence of published materials for Level III. Over one hundred supplementary publications for teaching literacy were identified in this appraisal.

Barnes and Hendrickson established the following rationale for the appraisal of the ABE literacy materials. Each publishers' basic and/or supplementary materials were appraised by considering:

1. Suggested use level and readability -- a general estimate of difficulty was estimated by the use of readability formulas.
2. Categorization of materials -- all materials were placed in appropriate categories according to beginning, intermediate and advanced instructional levels.
3. Basic and supplementary materials -- classification was made of materials into basic, sequential instructional units and supplementary, repetitive instructional units.
4. Adult interest -- consideration was given to materials on an adult interest-rating scale by considering illustrations, vernacular, content, and general format.
5. Instructional use -- materials were classified as having value in the following categories: reading, handwriting, mathematics, personal and social adjustment.
6. General information -- materials were considered in terms of cost, availability and format.[31]

A panel of four experts or professionals in the field of adult basic education and curriculum assessed the collection of published ABE materials.

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[31] See the following references: Edgar Dale and Jeanne S. Chall, "A Formula for Predicting Readability," Educational Research Bulletin, Vol. XXVII, (1948) pp. 11-20, 37-54; and, George Spache, "A New Readability Formula for Primary-Grade Reading Materials," Elementary School Journal, Vol. LIII (1953), pp. 410-13.

Barnes and Hendrickson concluded that: "Few broadly based materials are available in the adult basic education area that have an extended system of skill development, adequate provision for practice, and review and reinforcement of skills."[32]

A second review and appraisal of adult basic education materials was conducted by Otto and Ford in 1966 by utilizing a checklist procedure.[33] The purpose of the checklist is to present in a brief and systematic format facts common to each publisher's ABE materials and to present evaluative statements consensually arrived at by the reviewers. The checklist enables each program to be compared with other programs in many ways. The following questions are included on Otto and Ford's checklist:[34]

- Was important informational content being conveyed through the practice selections while reading skills were being learned?
- How is the pupil incorporated into the program and at what point in the program sequence does he enter?
- What is the source of vocabulary which the program introduces?
- Does the program contain enough practice materials?
- How is progress assessed?

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[32] Barnes and Hendrickson, Graded Materials, p. 6.

[33] Wayne Otto and David Ford, Teaching Adults to Read (Boston: Houghton Mifflin Company, 1967).

[34] Ibid., pp. 46-51.

- Are other language arts skills taught in conjunction with reading?
- How does the pupil gain self-reliance and self-respect?
- What provisions have been made to test the materials previous to their being offered for sale?
- Has the material been published with some consideration for the audience?
- Are there illustrations which facilitate instruction?
- Do the manuals describe the program in detail?

The checklist appears in the form of fifty questions which can be found in the Appendix. Otto and Ford conclude after reviewing twenty-four ABE programs from nineteen publishers that instructional material is available in adequate quantity and variety to satisfy a wide range of instructional needs. The assessment of available materials in light of the aforementioned concerns serve to assist the ABE teacher with the selection of appropriate materials for particular students and instructional situations.

Smith has produced a revised annotated bibliography of ABE materials by following a procedure similar to that followed in the previously discussed evaluations.[35] Forty-three publishers of ABE materials were identified and their materials rated as 1) "best,"

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[35] Edwin W. Smith, et al., A Revised Annotated Bibliography of Instructional Literacy Materials For Adult Basic Education (Tallahassee, Florida: Adult Basic Education Section, Florida State Department of Education, 1966).

2) "adequate," and 3) "fit for a particular need or predilection." Smith further categorized the reviewed ABE materials by three stages or levels: introductory, elementary and intermediate. Materials were also identified as being appropriate for beginning readers, disadvantaged youth, adults, adolescents, and foreign-born. Otto and Ford summarily dismissed materials falling into several of these categories from their checklist analysis and did not report them as ABE materials. This fact more than likely accounts for the disparity in the number of publishers found by Otto and Ford in comparison to the number of publishers reported by Smith.

Smith's conclusion is similar to that of Otto and Ford when he states: "At the present time, there is an ample variety of properly graded materials at the adult interest level. This was not the case several years ago."[36]

The reader's attention is called to the most recent bibliography of ABE materials, produced in 1967 by Minkoff.[37]

The efforts of educators to collect and assess available ABE literacy materials have been reviewed in the preceeding section. The following section of this chapter presents an overview of research conducted in adult basic education. Upon reading this section, one will find that the research many times is unrelated to previous studies, comes to few statistically relevant findings and more often than not is characterized by poor or inadequate design and procedures. This is the research foundation of adult basic education, nevertheless, and deserves consideration.

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[36] Ibid. Introductory page.

[37] Dorothy Minkoff, Adult Basic Education Curriculum Materials For Teaching: An Annotated Bibliography of Teaching Reading, Writing and Mathematics (Newark: Adult Education Resource Center, Newark State College, 1967).

Review of ABE Research

It is apparent that research in adult basic education is very much in its infancy and has yet to reach a level of coordination and accumulation that produces new, useable knowledge. Review of much of the recent research reveals that the "findings" of research projects more often than not consist of descriptions of discovery and self-fulfillment experiences of the ABE student. There are many instances where one finds the experimentally produced results of the project relegated to second place by the humanistic review of "true life" educational experiences of the adult students. Is this not, however, the normal evolution that would be expected as research efforts in an infant field begin to move to greater levels of sophistication? The research projects reviewed in this section should be viewed as initial efforts that hopefully will lead to increasing professionalization in a maturing field.

Zigler speaks to the difficulty of conducting research and evaluation in education in the following statement:

> I found not only reluctance but downright apathy to research. Too many educators treat the researcher as an enemy, not as someone to work with in seeing how we can all best serve children [adults], but we aren't going to find it unless we keep looking. Now we have

> a kind of numbers game--how many kids /adults/ and how much money--but no real evaluation. That's because it is easier to count kids /adults/ and dollars than to evaluate motivation and morale.[38]

Several exploratory studies have been conducted to determine the functional level of literacy of selected disadvantaged populations. Cook County, Illinois, has been the area of the United States most thoroughly researched in this regard. Hilliard conducted a study in 1962 designed to determine the literacy level of able-bodied persons receiving public assistance.[39] A sample of 680 persons, 97.7 per cent Negro, receiving public assistance, and representing 3,115 persons in separate households were found to have an average educational level of 8.8 years. When actual achievement levels were inspected, however, (through the use of the Stanford Reading test) 50.7 per cent of the sample achieved less than five completed years of schooling and were termed functional illiterates. The average achievement level equaled 5.9 years of school.

Hilliard verified the often suggested fact that persons who received their education in the urban North have higher educational levels and achievement levels than do persons educated in the rural

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[38] Edward Zigler in National Conference on Education of the Disadvantaged, Report of a conference held in Washington, D.C., July 18-20, 1966 (Washington: United States Office of Education, 1966), p. 33.

[39] Raymond M. Hilliard, director, The Blackboard Curtain: A Study to Determine the Literacy Level of Able-Bodied Persons Receiving Public Assistance (Chicago: Science Research Associates, Inc. and Cook County Department of Public Aid, 1962).

South. Relationships were also established between achievement scores and the following three variables: sex, age at leaving school, and age at time of participation in the study. The earlier Hilliard study supported the subsequent contention of Otto and Ford that years of schooling is of little value as an index of literacy. In the original sample, only 6.6 per cent had failed to complete five years of formal schooling, but 50.7 per cent of the same sample achieved at or below a fifth grade literacy level.

Brooks found the same basic results as Hilliard in exploring the extent of functional illiteracy in a study conducted in East St. Louis with 777 welfare recipients.[40] Using years of schooling as an index, 17.5 per cent of the population were found to be functionally illiterate. With achievement test data as an index, 457 or 58.8 per cent of the sample population were unable to achieve at a sixth grade level. For people failing to progress beyond the ninth grade, it appears that years of schooling is an invalid index of literacy.

Pinnock is conducting an exploratory study of functional illiteracy in developing and testing a system of education for producing employable adults in rural areas of the deep South.[41] The project is designed to integrate training in technical skills with related causes of unemployment. The project is of three year duration and provides for one year of training and two years of pretraining and posttraining activities in an effort to achieve maximum results from the project. The curriculum consists of two-thirds technical education, offering five areas of technical skills, and one-third general education. Selected cultural experiences are also offered. Continuing observation and evaluation procedures are incorporated into the project design.

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[40] T. J. Pinnock, An Exploratory Study of Functional Illiteracy in Macon County, Alabama (Tuskegee, Alabama: Tuskegee Institute, 1967).

[41] Deton J. Brooks, Jr., First They Must Read: A Study to Determine the Literacy Level of Able-Bodied Persons Receiving Public Assistance in East St. Louis, Illinois (Chicago: Cook County Department of Public Aid, 1964).

Evaluations of ABE programs and neighborhood centers sponsoring ABE programs have been initiated only recently. It is hypothesized here that through systematic review of the accomplishments of special projects, progress in adult basic education will be more rapid and effective. In an Oakland Public School study in 1964, an evaluation was attempted of their EOA Neighborhood Centers.[42] The sample comprised thirty-seven students from seven neighborhood centers who had averaged 211 hours of reading and spelling skills instruction. Test results indicated a gain of .22 of a grade level in word recognition and .51 of a grade level in paragraph reading. Posttest results indicated a gain of four spelling words correct over pretest scores. The results of this evaluation emphasize the concern expressed by many about the unsuitability of many ABE pretest-posttest instruments. Ten of the thirty-seven adults obtained perfect scores on the posttest. The ceiling effect of this posttest tends to conceal the true growth of the higher scoring students and threatens the validity of the evaluation.

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[42] Oakland Public Schools Research Department, Evaluation of EOA Neighborhood Centers, Adult Basic Education 1965-1966 (Oakland, California: Oakland Public Schools Research Department, 1966).

A second research study conducted by researchers with the Oakland Public Schools relied primarily on the subjective measures of "Teacher Rating Scales" and "student happiness indexes" to assess program effectiveness.[43] The population within the program was uncontrolled as was the pretest and posttest procedures. Results worthy of review show that the ABE students indicated spelling skills learned in the program were of greatest helpfulness. Spelling subtests had the highest median scores for all groups within the posttest population. This particular piece of research leaves much to be desired in experimental design and procedures.

Several researchers have focused on the effectiveness of simplified written materials with ABE students. Laubach conducted a study in 1964 designed to test the efficacy of specially prepared written materials in promoting effective communications.[44] Laubach selected four articles from literary magazines and rewrote each three ways considering readability and linguistic theory. Treatment mean scores at the end of the experiment showed significant differences only between treatment A (original magazine selections) and treatments B, C and D, which were linguistic and/or readability theory simplifications. Laubach reached the conclusion that it may not be advisable to depend on the simplified written message as the primary independent channel of communication for adults of limited reading ability.

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[43] Oakland Public Schools Research Department, Evaluation of EOA Basic Education Program 1965-1966 (Oakland, California: Oakland Public Schools Research Department, 1966)

[44] Robert S. Laubach, "A Study of Communications to Adults of Limited Reading Ability by Specially Written Materials," in Dissertation Abstracts 1963-1964 (Ann Arbor, Michigan: University Microfilms, Inc., 1964) p. 3151.

In a study by Allen in 1961, the Laubach Literacy films were used as specially prepared materials in penal institutions.[45] Students who averaged 1.97 years of educational achievement, averaged an increase of 2.5 years in reading, vocabulary and spelling after forty-nine hours of film-assisted instruction.

Walter and Ferguson reported significant gains in vocabulary and comprehension for students considered to be neither self-motivated nor self-supporting after involvement of them in three different "area-of-interest" instructional programs.[46] Self-motivation was the focal point in the preparation and application of instructional programs slanted directly to students' "area-of-interest." This report may well be the initial effort in a continuing attempt to develop ABE programs that attract and retain the functionally illiterate adult by appealing to special interests and extrinsic motivations.

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[45] D. W. Allen, An Experiment in Education with the Laubach Literacy Course of Study on Film at the Ohio State Reformatory (Syracuse: New Readers Press, 1961).

[46] Richard E. Walther and Leigh H. Ferguson, A Pilot Study of the Use of Area of Interest Self-Instructional Reading Courses Among Young Persons Considered to be Neither Self-Motivated Nor Self-Supporting (Silver Spring, Maryland: Educational Science Division, U.S. Industries, Inc., 1966).

Patten and Clark conducted a study in 1965 to assess the relative effectiveness of the use of the initial teaching alphabet and traditional orthographic approaches to teaching reading to hard-core illiterate Negroes in Detroit.[47] A population of sixty-one unemployed adult males selected from AFDC rolls received eighty hours of literacy instruction through either a traditional orthographic phonics approach or a modified phonics initial teaching alphabet approach. The results of the study indicated that the i/t/a approach facilitated reading instruction with adults below a fourth grade level. There were indications that the t.o. approach "tended" to meet the reading needs of adults with a reading level greater than fourth grade. Patten and Clark reached the following conclusions about teaching hard-core illiterates:

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[47] Thomas H. Patten, Jr., and Gerald E. Clark, Jr., "Literacy Training and Job Placement of Hard-Core Unemployed Negroes in Detroit," The Journal of Human Resources, Vol. III, No. 1 (Winter, 1968) pp. 25-46.

1. Most functional illiterates will not become effective readers.
2. Motivation of the hard-core unemployed adult is a major problem.
3. A problem of major importance is being able to learn the language of a literate society.

As was mentioned in the initial paragraphs of this section, the research that has been reviewed has evolved from the immediate needs and initial efforts of an emerging field within the discipline of adult education. It remains for the current leaders of adult basic education to provide the leadership and foresight to expand on the now existing research base with better directed and more experimentally valid research design.

CHAPTER THREE

EXPERIMENTAL DESIGN AND PROCEDURES

As stated in the Introduction, the purpose of this study is to evaluate the effectiveness of selected Adult Basic Education literacy materials in organized adult literacy programs. The rationale for the study lies in the belief that literacy materials should be submitted to a continuing cycle of evaluation, redesign and re-evaluation in order to achieve effective educational results. The need for evaluation at this time is most appropriate when one reviews the relatively primitive and indecisive state of current literacy instruction.

Rationale For the Study

The research design of this study makes possible the measurement of the educational effectiveness of two commercially prepared, literacy instructional programs in the classic pretest-posttest experimental design. The need for literacy materials that are oriented to specific populations was set forth in the introductory chapter. Pursuing this specific need for ABE materials, the rationale supporting this research includes a specific Spanish-speaking population of functionally illiterate adults as experimental subjects.

The following hypotheses of the study were instrumental in the definition of the parameters of the research and in lending direction to the establishment of experimental procedures.

Hypotheses of the Study

The following research hypotheses are stated in narrative and statistical formats. Statistical analysis of the data and presentation of the findings of this research will be structured by the following hypotheses:

1. There is no differential learning effect between the Mott and Sullivan Adult Basic Education literacy programs as administered to the experimental groups.

   $H_o: \beta_j = 0$ for all j

   $H_1: \beta_j \neq 0$ for some j

2. There is an interaction between the Mott and Sullivan ABE literacy program materials and the initial reading ability of the students.

   $H_o: \gamma_{ij} = 0$ for all ij

   $H_1: \gamma_{ij} \neq 0$ for some ij

3. There are significant relationships between the measured improvement of the student's ability and selected student characteristics.

   $H_o: \rho_{ij} = 0$ for all ij

   $H_1: \rho_{ij} \neq 0$ for some ij

Population - Experimental Subjects

The experimental groups selected for this experiment were composed of functionally illiterate adults who were at that time living in the respective areas of Kenosha and Waukesha, Wisconsin. The subjects were Spanish-speaking adults, and, for the most part, were migrant or ex-migrant workers who had migrated from the southwest region of the United States to find employment in the industrial complexes of Kenosha and Waukesha. The subjects, for the most part, had a Spanish-Mexican cultural orientation and were functionally illiterate to marginally literate in English. The experimental groups were assumed to be representative of the estimated population of 12,000 to 15,000 persons who migrate to Wisconsin each year as seasonal laborers.[1]

Research Design and Experimental Procedure

The study was conducted at Kenosha Technical Institute, Kenosha, Wisconsin and Waukesha County Technical Institute, Waukesha, Wisconsin. The experimental procedures were designed in cooperation with the General Education Departments of both area vocational and technical schools and were subsequently approved by the Wisconsin State Board of Vocational, Technical and Adult Education.

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[1] United Migrant Opportunity Services, Inc., Annual Report, 1967. /The title of the work is Annual Report - 1967: United Migrant Opportunity Services, Inc., Waukesha, Wisconsin./

Forty Spanish-speaking subjects were initially enrolled in basic literacy instruction classes at Kenosha Technical Institute as part of the United Migrant Opportunity Service Program (U.M.O.S.).[2] The subjects attended classes at Kenosha Technical Institute six hours per day, Monday through Thursday. Two hours per day were devoted to adult basic education in literacy. The subjects, enrolled as students in the U.M.O.S. program, received a stipend of $45.00 per week for regular participation in the educational program.

Initially, thirty Spanish-speaking functional illiterates were enrolled in basic literacy classes at Waukesha County Technical Institute. These basic literacy classes were conducted by Waukesha County Technical Institute for Spanish-speaking adults as well as for other adults of foreign descent. The classes were conducted for two hours each Monday and Thursday evening for volunteer adult students. No stipend plan was used in this program.

The subjects participating in the experiment at Kenosha Technical Institute received approximately fifty-four hours of basic English literacy instruction while attending class as participants in the United Migrant Opportunity Service Program.

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[2] The United Migrant Opportunity Service Program is a "war on poverty" program funded under Title III-B of the Economic Opportunity Act. A complete description of the U.M.O.S. program in Wisconsin can be found in the 1967 Annual Report for the U.M.O.S. project in Wisconsin, published in Waukesha, Wisconsin.

The volunteer subjects participating in the experiment at Waukesha County Technical Institute received approximately forty-eight hours of basic English literacy instruction while attending class for fifteen weeks as volunteer students.

Literacy instruction was initiated with both experimental groups after the first week of class, which was devoted to general student orientation, establishment of teacher-student rapport and basic orientation to remedial reading instruction. The literacy classes in both area vocational and technical schools were started within the two week period from February 5 to February 17, 1968.

The Kenosha Technical Institute adult basic education program terminated instruction for the U.M.O.S. students on April 11, 1968, at which time the subjects in the experiment received a posttest to measure their reading ability. The subjects in the volunteer literacy instruction classes at Waukesha County Technical Institute were phased out of the experiment with a posttest measuring their reading ability during the week of May 6, 1968.

During the second week of literacy instruction, the adult students were given a multiple criteria reading skills test (pretest) to identify their level of reading competency as measured by the selected criteria. Selected abilities that compose the fundamentals of literacy were designated as the multiple criteria pretest measure of reading ability. The rationale used to construct the pretest measure will be fully discussed later in this chapter. The ABE students were unaware that they were participating in an evaluation of literacy materials and an effort was made to maintain this unaware state.

The students were randomly assigned to experimental groups by drawing slips of paper from a container. No attempt was made to match individuals by their composite pretest scores because of the current undesirability of matching as a statistical research procedure. The current research trend is away from matching on a specific variable(s) because of the many additional extraneous variables that exist and minimize the "advantages" of a matched sample. The optimum ABE instructional group size was determined and adhered to as closely as possible under the circumstances that existed in the two instructional situations. The following items were used in support of the decision to set optimum group size at ten to fifteen students.

1. experiential assessment by the Experimenter and by the General Education Departments at Kenosha Technical Institute and Waukesha County Technical Institute regarding the number of functional illiterate adults that can be successfully taught by one ABE instructor.
2. recommendation received from the Laboratory of Experimental Design at the University of Wisconsin.[3]
3. number of subjects desirable for the specific statistical technique to be used in the analysis of the data.

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[3] Conference with Mr. Tom Houston, Laboratory of Experimental Design, University of Wisconsin, December 7, 1967.

4. review of the literature concerning ABE instructors' recommendations for optimum ABE group size.[4, 5, 6]

The adult students were divided into two sub-populations at Kenosha Technical Institute and into three sub-populations at Waukesha County Technical Institute according to their general literacy level as indicated by the pretest.[7] The sub-populations of functionally illiterate adults (or classes as they will now be referred to in this text) were each assigned an ABE instructor who had previous experience with basic literacy instruction. Within each class the students were randomly assigned to two experimental groups.

Four experimental groups were established at the Kenosha school and six experimental groups were established at the Waukesha school. A total of ten experimental groups were randomly assigned to one of the two selected ABE literacy programs. Five experimental groups were administered the Sullivan--Programmed Reading For Adults and five groups were administered the Mott Basic Language Skills Program. The rationale for the selection and use of these two ABE literacy programs is presented in the following section of this chapter.

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[4] Otto and Ford, Teaching Adults, pp. 167-68.

[5] Neff, A.B.E. in North Carolina, p. 305.

[6] Robert F. Barnes and Andrew Hendrickson, A Summary Report on U.S. Office of Education Research Project No. G-029: A Review and Appraisal of Adult Literacy Materials and Programs, (Columbus: Center for Adult Education, Ohio State University, 1965), p. 10.

[7] This was a requirement placed upon this experiment by the professional staffs of both the Kenosha and Waukesha schools. ABE classes would be stratified according to the general literacy level of the students in order to minimize the range of literacy abilities that the teacher would be required to instruct.

The basic experimental design for this study is illustrated in the following model:

			A.B.E. INSTRUCTORS				
School	Class	Exper. Groups	A	B	C	D	E
Kenosha Technical Institute	A	1	(10)				
		2	▨ (10)				
	B	3		(10)			
		4		▨ (10)			
Waukesha County Technical Institute	C	5			(6)		
		6			▨ (6)		
	D	7				(5)	
		8				▨ (5)	
	E	9					(4)
		10					▨ (3)

Numbers in ( ) indicate initial experimental group size.
Shaded sections indicate Mott Basic Language Skills Program treatment.
White sections indicate Sullivan Programmed Reading - Adults treatment.

Instructors "A", "B", "C", "D" and "E" were each assigned to a class of adult students, as the model indicates, in which two experimental groups were formed through random selection procedures. The classes were formed, as was mentioned previously, by a general grouping of students with similar reading abilities.

An important aspect of the experimental design, that similar evaluative studies in the ABE field lack, is the provision that each instructor teaches an experimental group of students using each of the selected reading programs. It is through this procedure of instructor assignment that the threat of "teacher effectiveness" was removed or minimized as a confounding variable. The reader is reminded that the five classes of ABE students were formed on the basis of reading ability, based on scores achieved on the pretest measures of reading ability. The general reading ability level of the five classes of ABE students was as follows:

General Measure of Initial Reading Ability by Grade Level	Class
$<$1.0 grade to 3.8 grade	Class A - Kenosha
4.0 grade to $>$9.0 grade	Class B - Kenosha
$<$1.0 grade to 2.3 grade	Class C - Waukesha
2.5 grade to 4.0 grade	Class D - Waukesha
4.3 grade to 7.9 grade	Class E - Waukesha

The research design provides for a measurement of the dependent variable before the independent variable is applied and again after it is withdrawn. This research design closely parallels what would be a multiple application of Van Dalen's "One-group Pretest-Posttest Design."[8] The following is a paradigm for this adult basic education materials evaluation.

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[8] Deobold B. Van Dalen, Understanding Educational Research (New York: McGraw-Hill Book Company, 1966) pp. 253-56.

	Pretest	Treatment	Teacher	Posttest
Randomly Assigned Experimental Groups	T_{1E}	X_1-Mott	A	T_{2E}
	T_{1E}	X_2-Sullivan	A	T_{2E}
	T_{1E}	X_3-Mott	B	T_{2E}
	T_{1E}	X_4-Sullivan	B	T_{2E}
	T_{1E}	X_5-Mott	C	T_{2E}
	T_{1E}	X_6-Sullivan	C	T_{2E}
	T_{1E}	X_7-Mott	D	T_{2E}
	T_{1E}	X_8-Sullivan	D	T_{2E}
	T_{1E}	X_9-Mott	E	T_{2E}
	T_{1E}	X_{10}-Sullivan	E	T_{2E}

Random assignment of students to the experimental or treatment groups was conducted so that the groups were kept as proportional and equal as conditions would permit.

Selection of Reading Programs (Independent Variables)

To review briefly, the purpose of this study is to evaluate the educational effectiveness of selected ABE literacy programs in teaching Spanish-speaking Americans to read English. In order that commercially published ABE literacy programs could be selected as independent variables for this experiment, it was necessary to develop first a rationale to guide and justify the selection process. The following rationale was developed for selection of the reading programs or treatments for this experiment.

1. A recent study conducted by Otto and Ford at the University of Wisconsin identified nineteen publishers of ABE literacy instruction programs.[9] A total of twenty-four different instructional reading programs were identified by Otto and Ford and subsequently evaluated through the use of a fifty question criteria designed to determine the characteristics of each program.
2. Currently available reading programs were found to be characterized by one of two fundamental approaches to reading instruction. These two fundamental approaches can be identified as the analytic approach and the synthetic approach.[10] Literacy materials that employ the analytic approach to instruction emphasize sight recognition and the learning of complete words, to be followed by the dissection of words into their component syllable and letter sounds. Materials that employ the

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[9] Otto and Ford, Teaching Adults, p. 52.

[10] George D. Spache, Toward Better Reading (Champaign, Ill.: Garrard Publishing Company, 1963) pp. 229.

synthetic approach to instruction emphasize recognition and learning of syllables, common letter groupings and letter sounds, followed by the construction of the complete word by the student.

3. The initial item in the rationale for selecting representative reading programs for the experiment served to identify the available instructional materials as either analytic or synthetic in approach and design. The following five questions were selected from the fifty evaluative questions posed by Otto and Ford and employed as primary indicators of the two fundamental approaches to reading instruction. These questions were asked of all instructional programs:

    a. Are the materials programmed?

    b. Do the materials include phonic skill building?

    c. Do the materials include sequentially organized skill building?

    d. Do the materials include context skill training?

    e. Do the materials include word analysis skills by word form?

4. After a review of the twenty-four ABE reading instruction programs identified by Otto and Ford, representative programs were chosen. Four programs were chosen as being representative of the analytic approach and three programs were chosen as being representative of the synthetic

approach to reading instruction. The Mott Basic Language Skills Program was chosen as a logical representative of the analytic approach to reading instruction. The W. M. Sullivan--Programmed Reading For Adults was chosen as a logical representative of the synthetic approach to reading instruction.[11] The justification for choosing these reading programs as treatments for the experiment is given below.

a. A dichotomy of approach to teaching reading is represented by the programmed Sullivan materials and the non-programmed Mott materials.

b. The selection of the Mott and Sullivan materials was on the recommendation of a professional basic reading skills researcher, Dr. Wayne Otto, Department of Curriculum and Instruction, University of Wisconsin.

c. The Mott and Sullivan materials are popular instructional materials and are currently in use in the adult basic education field.

d. The Mott and Sullivan materials are produced by recognized publishers in the ABE field.

e. The Mott and Sullivan materials are readily available, attractively packaged, self-contained and of recent publication.

5. When subjected to the initial five question criteria, the Mott and Sullivan instructional materials were evaluated by the following responses:

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[11] The Sullivan Reading For Adults program is described as a linguistic approach to reading instruction. While the Sullivan materials include the use of phonics in the programmed instruction, this instruction is an incidental approach to developing phonics skills in comparison to the directly explicit phonics instruction approach utilized in the Mott ABE literacy materials.

Mott	Sullivan	Five Question Criteria
No	Yes	*1. Are the materials programmed?
Yes	Yes	2. Do the materials include sequentially organized skill building?
Yes	No	*3. Do the materials include phonic skill building?
No	Yes	*4. Do the materials include context skill building?
Yes	Yes	5. Do the materials include word analysis skills by word form?

Questions identified by an asterisk identify basic features of the instructional materials that categorize the Mott materials as synthetic and the Sullivan materials as analytic in educational approach.

These specific responses to the five questions serve to categorize the instructional materials and are for the following reasons supported as valid in the determination of the Mott and Sullivan programs as treatments for the experimental groups.

Question 1 - The difference in basic design of the materials allows for an initial recognizable difference in treatments.

Question 2 - Both treatments possess the desirable feature of sequential organization of materials for skill building.

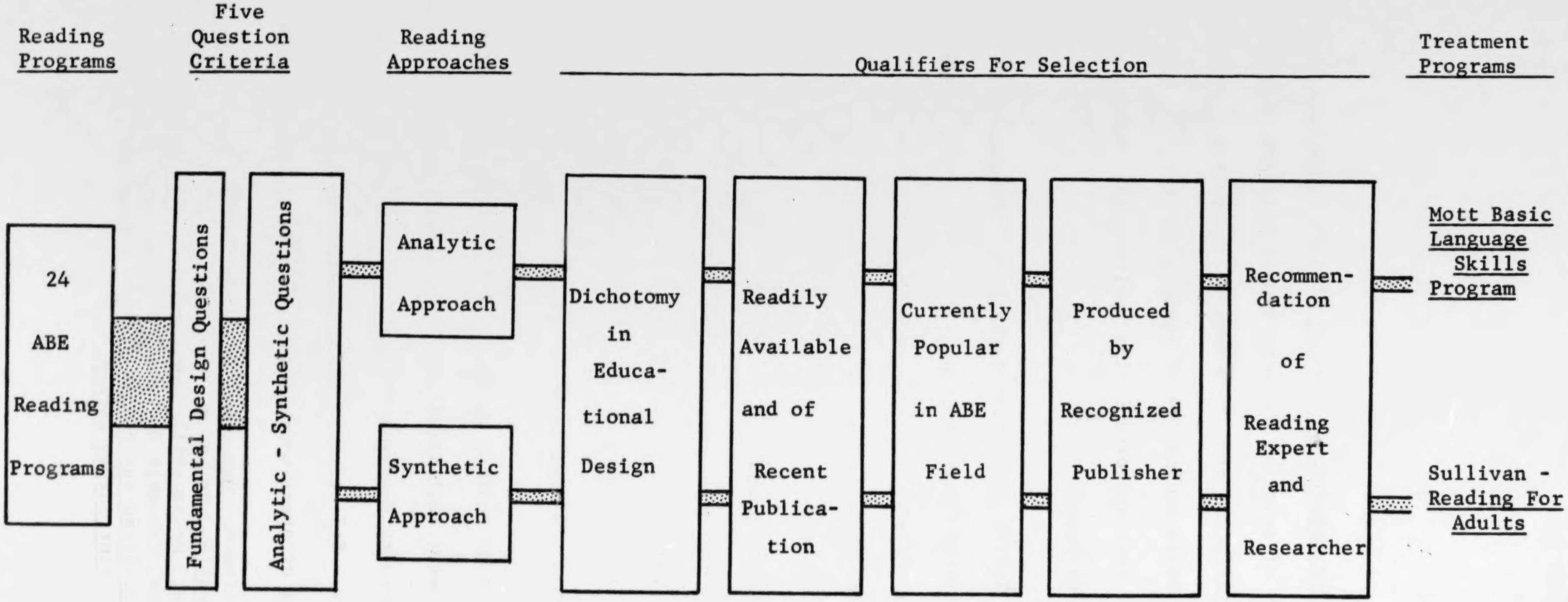
Question 3 - A second dichotomy of design is the analytic approach of the Sullivan materials versus the synthetic approach of the Mott materials. (see footnote 11).

Question 4 - Context skill building is an additional dissimilarity between the Mott and Sullivan materials design that produces a recognizable difference in instructional approach.

Question 5 - Both treatments possess in varying degrees instruction in word analysis skills leading to independent deciphering of unfamiliar words.

6. The Mott Basic Language Skills Program is a sequential, workbook series program to teach writing, spelling, reading and comprehension. It is published in a consumable paperbound, workbook format. It is described as a phonics approach to reading instruction. The Sullivan--Programmed Reading For Adults is a programmed, consumable, sequential paperbound text series, containing detailed vocabulary, offering supplemental readings and containing multiracial illustrations. It is described as a linguistic approach to reading instruction.
7. The following schema serves to summarize the specific sequence followed in the choice of the treatment reading programs which served as independent variables for this experiment.

Schema of the Rationale For Selection
of Reading Program Treatments


Reading Programs
Five Question Criteria
Reading Approaches
Qualifiers For Selection
Treatment Programs
24 ABE Reading Programs
Fundamental Design Questions
Analytic - Synthetic Questions
Analytic Approach
Synthetic Approach
Dichotomy in Educational Design
Readily Available and of Recent Publication
Currently Popular in ABE Field
Produced by Recognized Publisher
Recommendation of Reading Expert and Researcher
Mott Basic Language Skills Program
Sullivan - Reading For Adults

Selection of the Measures of Reading Ability (Dependent Variables)

A review of seven of the most widely used ABE examinations of reading ability was made to determine the skills currently considered as valid indicators of reading ability.[12] The various reading skills that appeared in the reviewed ABE reading examinations are listed below.

Reading Skills (Dependent variables)	Frequency of Appearance
1. Reading Comprehension	6
2. Vocabulary	4
3. Word recognition	2
4. Spelling	2
5. Reading Speed	2
6. Reading Accuracy	1
7. Blending	1
8. Syllabication	1
9. Sound Discrimination	1

Of these nine reading skills, the following comprise the pretest-posttest instrument that functions as an overall measure of reading ability: 1) Reading Comprehension, 2) Vocabulary, 3) Word Recognition and 4) Spelling. Selection of these particular skills was based on their frequency of appearance in the reviewed ABE examinations and on the recommendation of a qualified ABE materials researcher. Additional attention will be given to these reading skills that comprise the pretest-posttest in Section G of this chapter.

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[12] Tests reviewed: Harcourt, Brace and World, Inc.: Adult Basic Learning Examination, Harcourt, Brace and World, Inc.: Stanford Diagnostic Reading Test, McGraw-Hill Book Company: Tests of Adult Basic Education, Teachers College, Columbia University: Gates Reading Survey, McGraw-Hill Book Company: Sullivan Associates Placement Examination, Follett Publishing Company: Student Survey Form A.

Selection of ABE Instructors

The experimenter was dependent upon the General Education Departments of Kenosha Technical Institute and Waukesha County Technical Institute to locate qualified instructors for the experiment. Once located, five instructors for the ABE groups were chosen employing the following guidelines.

1. The instructors must meet the prescribed standards for instructors at both schools. School guidelines for hiring teachers were followed in choosing ABE instructors for both schools.
2. The instructors must have had formal training and prior experience in teaching functionally illiterate adults to read.
3. The instructors should not have had a great amount of past experience with the teaching of either of the two treatment programs selected for the experiment. Prior instructor competency with either of the two treatment programs must be avoided.
4. The instructors should not indicate a high degree of personal preference or commitment for either of the two reading programs.
5. The instructors should understand fully the rationale and experimental procedure of the study and agree to teach both programs as separate and independent treatments.

The instructors participating in the experiment were briefed fully on the design and experimental procedures. The instructors were solicited for suggestions and recommendations during the final stages of preparation for the experiment. The instructors had complete control of their groups for instructional purposes and were considered as co-researchers in the belief that subsequent close involvement produces a greater degree of instructor attention and interest in the research.

Data Gathering Procedures

Pretest-Posttest Instrument

As previously discussed, the four reading skills of Reading Comprehension, Vocabulary, Word Recognition and Spelling were chosen to comprise the Pretest-Posttest Instrument for this research. The reading skills, Reading Comprehension and Word Recognition, were tested for by use of the ABE Student Survey Form A, parts one and two.[13] The reading skills, Vocabulary and Spelling, were tested for by use of the ABLE - Adult Basic Learning Examination.[14] The published form of the examination was used in both cases with the accompanying instructions from the publisher. It is important to note that the Adult Basic Learning Examination is administered orally and was given in this experiment prior to the standard carbon-pencil answer form of the ABE Student Form A in the belief that orally administered examinations will lessen the degree of anxiety and threat on the part of the student. The students participating in this experiment were functionally illiterate in English, but could speak Spanish. In all cases, an attempt was made to lessen the threat of examination by briefing the Spanish-speaking adult students, prior to administering the pretest, in their native language.

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[13] Test program by Elvin Rasof and Monroe C. Neff; Educational Opportunities Project, Follett Publishing Company, Chicago, Illinois.

[14] Test program by Bjorn Karlsen, Richard Madden and Eric Gardner; Test Department; Harcourt, Brace and World, Inc., New York, New York.

According to the publishers of the selected reading examinations, the examinations have been standardized with adult basic education groups. The adult students participating in the standardizing trials were considered typical of adults who might be found in large urban pockets of poverty and illiteracy. No ABE examinations were located that were standardized specifically for adult Spanish-speaking populations.

Teacher Observation Instrument

One of the objectives of this experiment was to identify the specific component parts of the reading instruction programs published by Mott and Sullivan. An extension of this objective was the determination of the effects that these component parts had on the Spanish-speaking students participating in the experiment. Likewise, a hypothesis of this study is that the Mott and Sullivan reading programs can be analyzed by considering the component parts from which they are constructed, and furthermore, that through systematic observation of students, the ABE instructor can determine the relative effects of these identified component parts.[15]

The Mott and Sullivan reading programs were subjected to careful analysis by the experimenter and members of the dissertation committee. Assistance was also requested and received from the ABE instructors involved in the experiment. A detailed list of the contributing component parts of each program was compiled. From this detailed list, combined lists of general component parts for each reading program were derived and fashioned into an "observation record" or "anecdotal record" for the ABE instructor's classroom use. The observation records were pretested with the five participating instructors before the final format was arrived at and reproduced. Samples of these Teacher Observation Instruments and accompanying observation instructions can be found in the Appendix.

Systematized observation procedure for the ABE instructors was established. Instructors made observations on students during class meetings. The instructors chose one student per class meeting to observe, and completed the appropriate observation form. All students in the class were observed one time before a second observation was made on any one student. The reactions of the students to the identified component parts that make up the Mott and Sullivan programs were recorded on the observation record designed for the materials with which the student was working. It was hypothesized that the recorded student reactions to a specific component part of a reading program would give an identification of the effectiveness of that component part in teaching reading skills.

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[15] Component parts is used here to mean the native elements of each of the selected ABE programs that can be isolated and identified as existing either in giving direction, sequence and continuity to the process of reading instruction and/or in creating and maintaining a foundation or framework for the development of reading skills by the student.

The rationale behind this systematic observation of students is that it is necessary for educators to know not only which ABE reading programs are most effective for which audience, but also to know what specific component parts of the programs make them most or least effective. It is hypothesized that with this specificity of information, effective progress can be made in designing literacy materials for the education of the culturally and eductionally deprived adult.

Statistical Treatment of the Data

The recently developed FINN program for computer analysis of small sample research was utilized in the analysis of the data.[16] Multivariate analysis of variance was the basic statistical technique used in analyzing the pretest and posttest scores and the relationships that existed between them. Within the parameters of the available data, the statistical approach of the FINN program was regression analysis using pretest scores as covariates and posttest scores as dependent variables.

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[16] Jeremy D. Finn, Multivariance (Buffalo: State University of New York, Department of Educational Psychology, 1967.

The following linear models depict the statistical procedure that was followed in the multivariate analysis of variance of the data with respect to hypothesis one and hypothesis two.

Hypothesis One: There is no differential learning effect between the Mott and Sullivan Adult Basic Education literacy programs as administered to the experimental groups.

$$X_{ij} = \mu + \alpha + \varepsilon_{1-5} + (\varepsilon_{1-5} + \alpha) + e_{ij}$$

where:

μ = grand group mean

α = treatment effect (Mott or Sullivan)

ε = group effect (teacher, class, ability, etc.)

$\varepsilon + \alpha$ = interaction effect

e = individual effect (error)

Hypothesis Two: There is an interaction between the Mott and Sullivan ABE literacy program materials and the initial reading ability of the students.

$$X_{ij} = \mu + \alpha + A + P + e_{ij}$$

where:

μ = grand group mean

α = treatment effect (Mott or Sullivan)

A = initial ability

P = Posttest score

E = individual effect (error)

Hypothesis Three: There are significant relationships between the measured improvement of the student's ability and selected student characteristics.

The relationships between student demographic characteristics and amount of reading progress, as shown by the comparison of pretest and posttest scores, were examined by the use of correlational techniques. Demographic data collected for the establishment of correlations with rate and degree of reading progress by students included:

1. occupation
2. time of last employment
3. marital status
4. educational background
5. location of last school attended
6. number of dependents

The data were analyzed with the assistance of research and design personnel at The University of Wisconsin Laboratory of Experimental Design. The following two chapters of this dissertation present an analysis of the data with respect to the hypotheses of the study and conclusions and implications for adult basic education curriculum materials.

CHAPTER FOUR

ANALYSIS AND PRESENTATION OF THE DATA

Data specifically pertaining to the evaluation of the educational effectiveness of the Mott Basic Language Skills Program and the Sullivan--Programmed Reading For Adults literacy programs will be presented in this chapter. The population selected for this study included Spanish-speaking Americans of Mexican or Puerto Rican descent. Several adult students of other foreign nationalities also participated in the study. In all cases, the ABE students were learning English as a second language. Although the adults involved in this study were classified as functionally illiterate in the English language, they may or may not have been illiterate in their native language. No measure of the ABE student's literacy in their native language was obtained for this research. The data analyzed were acquired via pretest and posttest literacy examinations administered to the adult basic education students prior to and after exposure to one of the two selected ABE literacy program treatments.

Chapter IV is divided into four sections. Descriptive data regarding the general characteristics of the study population are presented in section one. Data relating to Objective One are analyzed and presented in section two of this chapter. Data pertaining to

Objective Two of this study are found in section three. The pertinent data relating to Objectives Three and Four are presented in section four of this chapter.

Section One

General Characteristics of the Study Population

A description of the initial ABE population of functionally illiterate adults by sex and by school is presented in Table 1. A total of sixty-four participants were initially involved in the study, 59 per cent being male and 41 per cent female.

TABLE I

DESCRIPTION OF POPULATION BY SEX AND SCHOOL

Sex	Kenosha Technical Institute	Waukesha Co. Technical Institute	Total Initial Population	Per Cent of Sample
Female	11	15	26	41
Male	25	13	38	59
TOTAL	36	28	64	100

Although a population of sixty-four ABE students was initially involved in the study, for purposes of statistical analysis only those who remained in the ABE program could be considered. All students who voluntarily dropped out of the ABE classes at Kenosha

Technical Institute and Waukesha County Technical Institute were eliminated from the population and not considered in the resultant evaluation of the educational effectiveness of the Mott and Sullivan literacy programs. A description of the population by school and participation is contained in Table II. The total number of ABE students that remained in the literacy classes at both schools will be the "population" that is referred to throughout the remainder of this chapter.

TABLE II

DESCRIPTION OF THE POPULATION BY SCHOOL AND PARTICIPATION

School	Sex	Initial Population	Dropouts	Population Remaining in Study		Per Cent of Remaining Population	TOTAL
				No.	Per Cent		
Kenosha	Male	25	12	13	52	31	52
	Female	11	2	9	82	21	
Waukesha	Male	13	4	9	69	21	48
	Female	15	4	11	73	27	
TOTALS		64	22	42	66	100	100

Sixty-six per cent of the initial population was retained in the ABE classes and considered as the study population for statistical analysis. Fifty-two per cent of this population was male and 48 percent was female. The total number of dropouts from the study, for which the researcher was unable to secure posttest scores, was twenty-two. Of these twenty-two dropouts, 73 per cent were male and 27 per cent were female. Kenosha Technical Institute had 64 per cent of the total of twenty-two dropouts, but also had 56 per cent of the initial population involved in the study.

The retention percentage of 66 per cent of the initial population compares quite favorably with the retention of ABE students in two nationally reported literacy materials studies that were funded by the United States Office of Education. The Greenleigh and Associates, Incorporated, study, Field Test and Evaluation of Selected Adult Basic Education Systems, retained 64 per cent of their initial population of 1873 ABE students.[1] The Missouri Adult Vocational--Literacy Materials Project, conducted by the University of Missouri in 1967, retained eighteen of thirty-four students, or 54 per cent, of the initial population.[2]

As previously discussed, the participants in the study were functionally illiterate adults voluntarily attending adult basic education classes so that they might learn English as a second language. The participating ABE students are described by sex and location of their primary or secondary schooling in Table III.

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[1] Greenleigh and Associates, Inc., Field Test and Evaluation of Selected Adult Basic Education Systems (New York: Greenleigh and Associates, Inc., 1966), p. 46-49.

[2] Howard W. Heding, director, Missouri Adult Vocational--Literacy Materials Project, (Columbus, Missouri: University of Missouri, 1967), p. 30.

TABLE III

POPULATION BY SEX AND LOCATION OF PRIMARY/SECONDARY EDUCATION

School Location	Female	Male	Kenosha Tech. Institute	Waukesha Co. Tech. Inst.	TOTALS x Location
Wisconsin	3		3		3
Texas	6	15	17	4	21
Mexico	2	1		3	3
Cuba	1	2		3	3
Puerto Rico	2	1		3	3
France	1			1	1
Germany	1	1		2	2
No School	4	2	3	3	6

The majority of the ABE students received some primary school English education in the Texas public school system. Several students attended primary school in Wisconsin.

The education level of the ABE students in the study is further described in Table IV. It is important to discern in the following table that twenty-nine of the adults, 69 per cent, had an eighth grade or less education and were recognized as below the currently accepted level of literacy for native-born English-speaking Americans.

TABLE IV

POPULATION BY YEARS OF SCHOOLING COMPLETED

Years Completed	Kenosha Tech. Inst.			Waukesha Co.Tech.Inst.			TOTALS	ACCUM. TOTALS
	Male	Female	Total	Male	Female	Total		
0	2	1	3		3	3	6	6
1					1	1	1	7
2							0	7
3	4	2	6	1		1	7	14
4							0	14
5	3	1	4		2	2	6	20
6	3	1	4	1		1	5	25
7		2	2				2	27
8		1	1	1	1	2	3	30
9		1	1	1	1	2	3	33
10	1		1	1		1	2	35
11		1	1	1		1	2	37
12				1	2	3	3	40
over 12				1	1	2	2	42

There appears to be no noticeable difference in the levels of schooling between the male and female ABE students. Inspection of the levels of schooling achieved by the ABE students reveals that 31 per cent had over an eighth grade education. Two adults had post-secondary education. Several adults were educated in a foreign country. Most of the adults, however, received an English-speaking education in the United States that was so severely colored by a Spanish--Mexican subculture that meaningful learning was not achieved.

Further description of the adult population that was retained in the study is presented in Table V in a categorization of participants' age by school.

TABLE V

POPULATION BY AGE AND SCHOOL

Age	Kenosha Tech. Inst.	Waukesha Co. Tech. Inst.	TOTAL	Accum. Per Cent
Under 21	2		2	05
21 to 25	9	3	12	33
26 to 30	3	4	7	50
31 to 35	5	5	10	74
36 to 40		4	4	83
41 to 45	1	2	3	90
46 to 50	1	1	2	95
Over 50	1	1	2	100

The great majority of adult students fell into a fifteen year range from twenty-one to thirty-five years of age. Surprisingly few of the students were under twenty-one years of age, although they were eligible to participate in the stipend-based Kenosha ABE program (United Migrant Opportunity Services, Inc.) as well as the volunteer evening program conducted at Waukesha.

An additional descriptive variable of the adult population is the size of the student's family. Family size by sex is described in Table VI.

TABLE VI

POPULATION BY SEX AND FAMILY SIZE

Size of Family	Male	Female	TOTALS
1	2	4	6
2	2	5	7
3	3	3	6
4	3	4	7
5	5	1	6
6	1	0	1
7	3	2	5
8 - 10	1	0	1
11 - 13	2	1	3

There seems to be no significant finding in an ordering of students by family size other than the observation that female students came from homes with fewer family members. Of the twenty female students and twenty-two male students participating in the study, 75 per cent of the female and 86 per cent of the male students were married.

A description of the study population by their present occupation or immediate past employment is presented in Table VII. It was felt that immediate past employment should be included in this table due to the sporadic and unstable employment pattern of the Mexican or Spanish-American migrant worker.

TABLE VII

POPULATION BY PRESENT EMPLOYMENT OR IMMEDIATE PAST EMPLOYMENT

Type of Employment	Kenosha Tech. Institute	Waukesha County Tech. Institute	TOTAL
Agricultural laborer	9		9
Child care	1		1
Assembly line worker	8	2	10
Shipping clerk	3	1	4
Foundry technician-worker		7	7
Food service worker		2	2
Sales clerk		1	1
Nursing Aide-- Practical Nurse		1	1
Secretarial work		1	1
Domestic servant		4	4
Janitorial service	1		1
No work experience		1	1

Participation by functionally illiterate adults in full-time ABE programs occurs more often than not because of unemployment. Although the adults may recognize some value to the deferred gratification aspects of education, their participation is many times a result of unemployment. The majority of the ABE students in this study, especially the adult students in the U.M.O.S. program at Kenosha Technical Institute, were actively seeking full-time employment. The professional U.M.O.S. counselor was a source of employment for these adults and found employment for eight to ten adults at two local industries during the course of this research. The preponderance of Kenosha adults in two areas of employment is the result of this counselor's efforts.

In almost all cases, acceptance of full-time employment by the ABE student resulted in a withdrawal from the ABE program or a severe curtailment of attendance at the ABE classes.

The objective of this section has been to focus upon the ABE students involved in the study through a presentation of relevant demographic data. The second section of this chapter is concerned with the analysis and presentation of data relating to Objective One and Hypotheses One and Two of the study.

Section Two

Objective One: "To determine the educational effectiveness of selected literacy program materials as used by adult basic education classes in increasing the reading abilities of functionally illiterate adults."

Two hypotheses were designated to test statistically the educational effectiveness of the Mott Basic Language Skills Program and the Sullivan--Programmed Reading For Adults program. Data presented in this section of Chapter IV is directly structured by these statistical hypotheses in satisfying the requirements of Objective One.

Hypothesis One

> There is no differential learning effect between the Mott and Sullivan Adult Basic Education literacy programs as administered to the experimental groups.

Hypothesis Two

> There is an interaction between the Mott and Sullivan ABE literacy program materials and initial reading ability of the students.

The Finn multivariate analysis of variance program was used to analyze the data. A total of thirty variables per individual were considered by the Finn program. These variables were categorized as follows:

Independent variables (total of 22)

4 - Pretest scores per individual
4 - Posttest scores per individual
4 - Pretest grade values per individual
4 - Posttest grade values per individual
6 - Demographic variables per individual

Dependent variables (total of 8)

4 - Transformed variables formed by the $T_2 - T_1$ difference by vector per individual

4 - Transformed variables formed by the $G_2 - G_1$ difference by vector per individual

The Finn multivariance program summed individual test scores and grade values by cell and performed statistical analysis by cell (of individuals) rather than by individuals. The number of individuals per cell is shown in Table VIII. An overview of the study population was presented in Table II.

TABLE VIII

CELL IDENTIFICATION AND FREQUENCIES

Cell	Class	Treatment (Literacy Program Used)	N (42)
1	1	Mott	4
2	1	Sullivan	5
3	2	Mott	7
4	2	Sullivan	6
5	3	Mott	4
6	3	Sullivan	4
7	4	Mott	3
8	4	Sullivan	3
9	5	Mott	2
10	5	Sullivan	4

Cells 1-4 Kenosha Technical Inst.	Mott literacy program - N of 20
Cells 5-10 Waukesha Co. Tech.Inst.	Sullivan literacy program - N of 22

Three tests for significance were performed by the multivariance program. To satisfy the demands of Hypothesis One, concerning differential effect between the Mott and Sullivan ABE programs, tests for significance were calculated between classes and between treatments. To satisfy the demands of Hypothesis Two, concerning interaction between the ABE literacy materials and the initial literacy level of the ABE students, a test for significance was calculated for classes x treatments. Descriptive data for the statistical tests appears in Table IX.

TABLE IX

MEANS AND STANDARD DEVIATIONS OF DEPENDENT VARIABLES

Variable	Mean	S.D.
Reading Comprehension Test Differences	4.76	10.51
Reading Comprehension Grade Differences	.59	0.89
Word Recognition Test Differences	3.28	5.17
Word Recongition Grade Differences	.58	1.12
Vocabulary Test Differences	4.26	8.32
Vocabulary Grade Differences	.49	1.21
Spelling Test Differences	3.74	4.44
Spelling Grade Differences	.74	0.90

Test differences ($T_2 - T_1$) Where:
Grade differences ($G_2 - G_1$) T_1 and G_1 = pretest score and grade
T_2 and G_2 = posttest score and grade

Statistical Analysis

Cell frequencies were unequal in the 2 x 5 analysis of variance schema, resulting from random voluntary withdrawal of S's from the study population. As previously stated, comparisons were made on a cell basis through consideration of within cell scores for S's.

The analysis of variance produced the following summation of statistical results:[3]

- A significant difference in reading achievement between the five ABE classes.
- Lack of an overall significant difference in student reading achievement between the Mott and Sullivan literacy materials treatment groups.
- Lack of an overall significant A x B interaction between the Mott and Sullivan literacy materials and initial levels of student literacy.

The first summary observation regarding a significant difference in reading achievement between ABE classes is not germane to the statistical hypotheses and will be discussed later in this section of Chapter IV. A discussion of the statistical results relevant to the hypotheses of this study will follow the presentation of the ANOVA data in summary form in the succeeding eight tables.

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[3] The reader is reminded that the ABE students were grouped into classes by level of reading ability. Within each of the five classes there existed two experimental groups, receiving either the Mott or Sullivan literacy programs as treatments.

TABLE X

ANALYSIS OF VARIANCE WHEN READING COMPREHENSION TEST SCORE DIFFERENCE WAS DEPENDENT VARIABLE

Source of Variation	SS	df	MS	F	p
Rows (classes)	266.86	4	66.714	.603	NS
Columns (treatments)	525.86	1	525.895	4.756	.05
Interaction	66.08	4	16.519	.149	NS
Within cells	3537.72	32	110.553		
TOTAL	4396.52	41			

TABLE XI

ANALYSIS OF VARIANCE WHEN READING COMPREHENSION GRADE VALUE DIFFERENCE WAS DEPENDENT VARIABLE

Source of Variation	SS	df	MS	F	p
Rows (classes)	12.84	4	3.209	4.033	.01
Columns (treatments)	1.59	1	1.595	2.005	NS
Interaction	.44	4	0.109	0.137	NS
Within cells	25.46	32	0.795		
TOTAL	40.33	41			

TABLE XIV

ANALYSIS OF VARIANCE WHEN VOCABULARY TEST SCORE DIFFERENCE WAS DEPENDENT VARIABLE

Source of Variation	SS	df	MS	F	p
Rows (classes)	1179.50	4	294.876	4.256	.01
Columns (treatments)	172.12	1	172.118	2.484	NS
Interaction	585.21	4	146.302	2.111	.05
Within cells	2217.06	32	69.283		
TOTAL	4153.89	41			

TABLE XV

ANALYSIS OF VARIANCE WHEN VOCABULARY GRADE VALUE DIFFERENCE WAS DEPENDENT VARIABLE

Source of Variation	SS	df	MS	F	p
Rows (classes)	26.57	4	6.646	4.543	.01
Columns (treatments)	0.66	1	0.658	0.450	NS
Interaction	20.02	4	5.004	3.421	.05
Within cells	46.81	32	1.462		
TOTAL	94.06	41			

TABLE XVI

ANALYSIS OF VARIANCE WHEN SPELLING TEST SCORE DIFFERENCE WAS DEPENDENT VARIABLE

Source of Variation	SS	df	MS	F	p
Rows (classes)	346.62	4	86.654	4.394	.01
Columns (treatments)	23.07	1	23.086	1.170	NS
Interaction	20.89	4	5.223	0.264	NS
Within cells	631.30	32	19.728		
TOTAL	1021.88	41			

TABLE XVII

ANALYSIS OF VARIANCE WHEN SPELLING GRADE VALUE DIFFERENCE WAS DEPENDENT VARIABLE

Source of Variation	SS	df	MS	F	p
Rows (classes	23.79	4	5.948	7.368	.01
Columns (treatments)	0.03	1	0.034	0.042	NS
Interaction	1.57	4	0.392	0.486	NS
Within cells	25.83	32	0.807		
TOTAL	51.22	41			

Discussion

The analysis of variance indicated that the reading achievement of adult basic education students, averaged over five classes containing various levels of literacy, is not significantly different for the Mott or Sullivan literacy materials treatment groups. The only significant difference that existed was between the pretest and posttest scores of the treatment groups on the Reading Comprehension variable. Observation of means of the pretest-posttest score differences reveals that the students in the Sullivan treatment groups did significantly better than the students in the Mott treatment groups in Reading Comprehension.

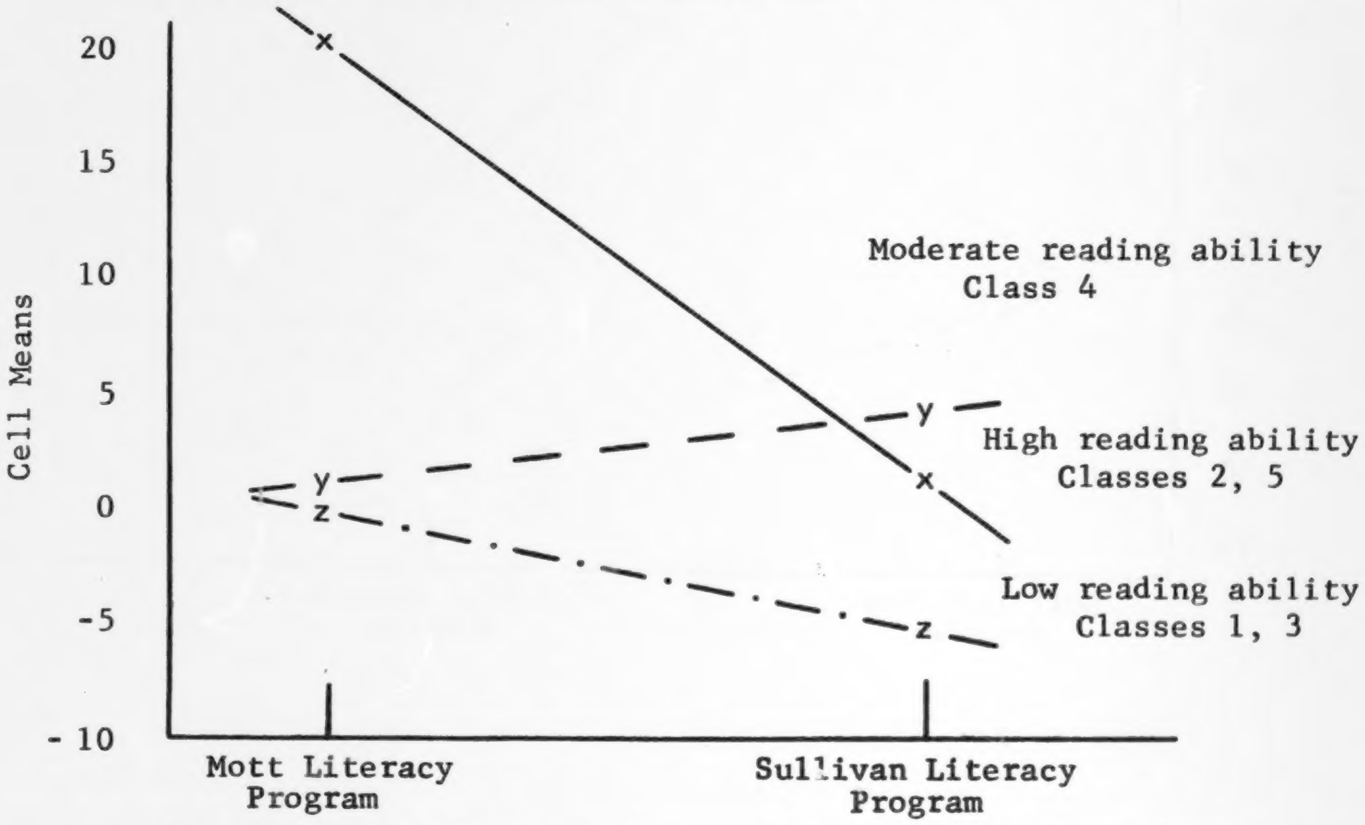
An a posteriori comparison of the means of the Reading Comprehension test differences of the Mott and Sullivan treatment groups, using the Scheffe' Multiple Comparison For Rows Technique, did not identify a significant difference at the .05 level of significance. The Scheffe' technique is more rigorous than other multiple comparison methods with regard to Type I error and can be expected to produce fewer significant results. Such was the case with this comparison, as the ANOVA significant F could have been due to chance.

The multivariate analysis of variance program revealed a significant difference as existing at a $p < .442$ level between treatment groups. This large p size emphasizes quite readily the absence of any significant difference between treatment groups.

Inspection of the ANOVA tables reveals a lack of an A x B interaction between initial reading ability classes and treatments in all but one variable. A significant interaction ($p < .05$) existed between the initial literacy level of the ABE students and the Vocabulary test variable and grade variable with the Sullivan literacy program. In other words, insofar as the Adult Basic Learning Examination (ABLE) reflects true reading achievement, the Mexican-American ABE students with an initial low and moderate reading ability (for functionally illiterate adults) are not benefited in the development of an English vocabulary with the Sullivan literacy program. The profiles of the main effects of the Mott and Sullivan literacy programs with regard to the Vocabulary variable appear as follows:

TABLE XVIII

PROFILE OF MAIN EFFECTS OF INTERACTION WITH VOCABULARY VARIABLE (TEST SCORE DIFFERENCE)



Low reading ability range - 1.0 to 3.0 grade level
Moderate reading ability range - 3.0 to 3.9 grade level
High reading ability range - 4.0 to 9.0 grade level

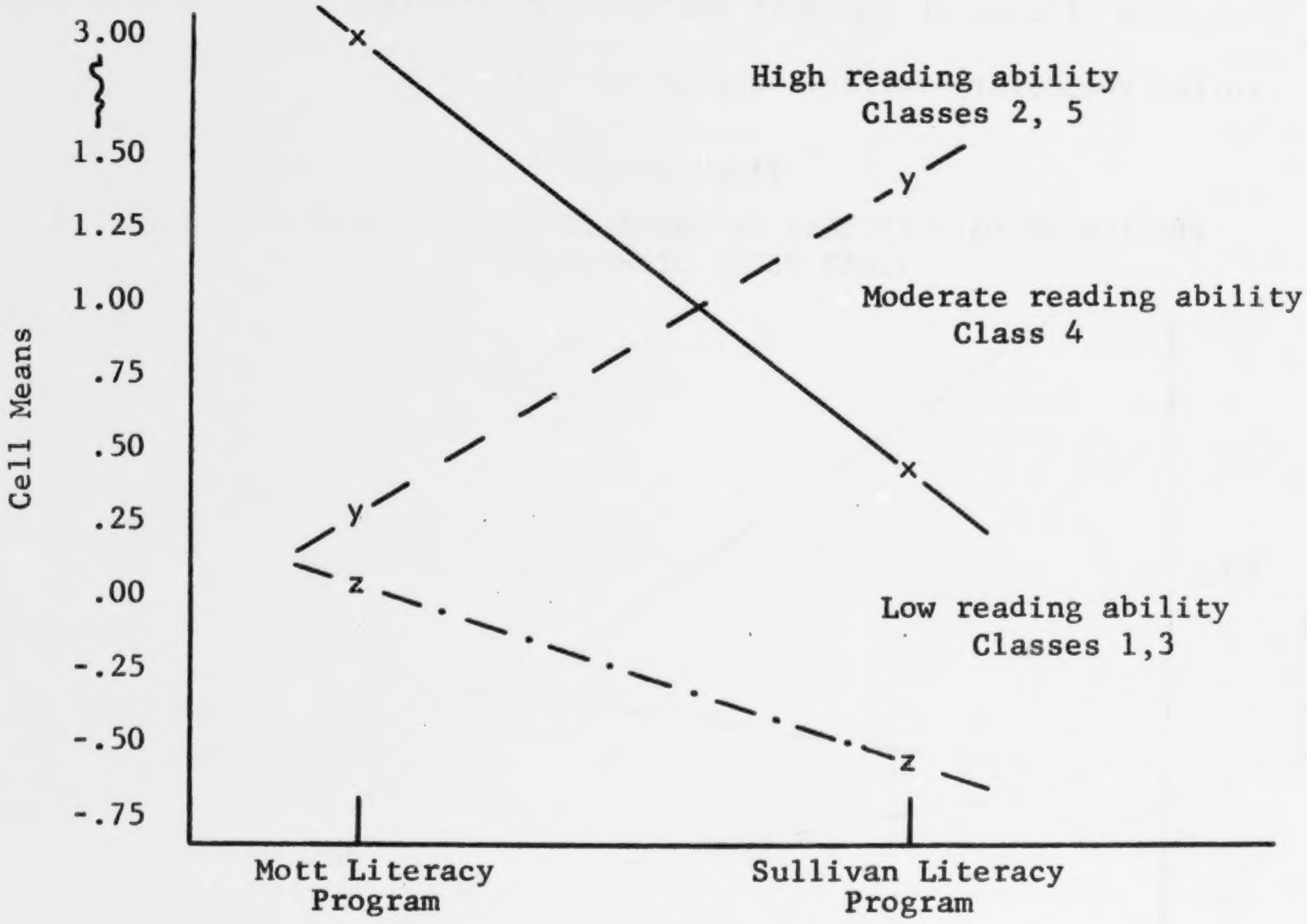
TABLE XIX

OBSERVED CELL MEANS FOR VOCABULARY VARIABLE

	Treatments			
Initial Ability Levels	Mott		Sullivan	
	Test Difference	Grade Difference	Test Difference	Grade Difference
High	1.77	.285	3.69	1.376
Moderate	19.33	3.266	2.33	0.400
Low	0.00	0.135	-6.33	-0.522

TABLE XX

PROFILE OF MAIN EFFECTS OF INTERACTION WITH VOCABULARY VARIABLE (GRADE VALUE DIFFERENCE)



Generally, it should be mentioned that ABE students with initial reading abilities at a higher level and with the Sullivan program treatments, seemed to do significantly better than their counterparts when being tested for vocabulary development. It must be questioned, however, because of the initial higher reading ability, if the medium for further vocabulary improvement did in fact come from the Sullivan literacy program or from another source.

Summary

Eight groups of data were considered in the test of Hypothesis I. Seven of these groups of data tend to support acceptance of Hypothesis I, while one of these groups of data tends to support its rejection. Decision: The data do support the research hypothesis that there is no differential effect between the Mott and Sullivan ABE literacy programs.

Eight groups of data were also considered in the testing of Hypothesis II. Six of these groups tended to support rejection of Hypothesis II, while two of these groups tended to support acceptance of Hypothesis II.

Decision: The data do not support the research hypothesis that there is an interaction between the Mott and Sullivan literacy programs and initial reading ability of students (Sullivan program--Vocabulary variable excepted).

Data Not Relevant to Specific Hypotheses

As previously mentioned, the analysis of variance for classes revealed a significant difference ($p < .0005$) in reading achievement between the five classes of ABE students. One would expect that between these five groups or classes of students, organized at either low, moderate, or high initial reading ability levels, a difference in the amount of reading achievement could be shown to exist. Eight groups of data pertained to the ANOVA test for a significant difference in reading achievement between ABE classes.

The analysis revealed that the S's in different classes achieved differentially. The nature and direction of this differential achievement is revealed in the class comparisons in Tables XXI and XXII.

TABLE XXI

COMPARISON OF BETWEEN CLASS MEAN GAINS WHEN TEST DIFFERENCE IS DEPENDENT VARIABLE

	Initial Reading Abilities		
Dependent Variables	Low	Moderate	High
Reading Comprehension	3.11	5.66	5.95
Word Recognition	1.11	10.00	3.05
Vocabulary	-3.58*	10.99	2.79
Spelling	1.17	3.99	5.94

Formal reading instruction benefited all groups (with one exception*), in the four tested areas of reading ability. It is indicated in Table XXII, by the Scheffé Multiple Comparison For Rows Technique, in comparison of means, that amount of gain may be a direct function of the initial literacy level of the ABE student.

The Scheffé test is most rigorous concerning Type I error.[4] This stringent application of the F test accounts for some percentage of NS decisions in Table XXII. Nevertheless, its use is advantageous as it minimizes the chance for Type I error.

TABLE XXII

CLASS COMPARISONS OF READING ACHIEVEMENT
WHEN TEST DIFFERENCE IS DEPENDENT VARIABLE

Class Comparisons		$F_{obser} = t^2$	df	p
Reading Comprehension				
	Low vs Moderate	0.263	4,32	NS
	Low vs High	0.654	4,32	NS
	Moderate vs High	0.003	4,32	NS
Word Recognition				
	Low vs Moderate	13.145	4,32	.05
	Low vs High	1.26	4,32	NS
	Moderate vs High	8.88	4,32	.05
Vocabulary				
	Low vs Moderate	13.591	4,32	.05
	Low vs High	5.522	4,32	.05
	Moderate vs High	4.220	4,32	.10
Spelling				
	Low vs Moderate	1.789	4,32	NS
	Low vs High	10.381	4,32	.05
	Moderate vs High	0.879	4,32	NS

F' with 4,32 df, $< .05 = 5.34$ F' with 4,32 df, $< .10 = 4.28$

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[4] Type I error is the probability of accepting the alternative hypothesis (H_1) when the null hypothesis (H_o) is true. The Scheffé test minimizes this probability.

The observations made from an analysis of these between class data should be viewed with respect to the prejudice that threatens its significance. The most obviously threatening variable is "teacher effectiveness." Each of the classes, although organized by initial literacy level, were assigned a different teacher. These data, then, can easily represent skewed reading gains as the combination of teacher and student variables act to confound the overall effect of the reading materials.

Summary

Eight groups of data were considered in testing for a significant difference between ABE classes. Differential effect between rows (initial literacy level at beginning of study) was not of concern in this study as it was assumed that educational level would affect amount of reading gain. Because of the confounding variable of "teacher effectiveness" being uncontrolled, no hypothesis was posed for these data. There seems to be a significant difference between the low initial ability group or class and the Moderate and High initial ability groups or classes, particularly with respect to the Vocabulary variable. Differential effect between low and high ability groups or classes with respect to the Spelling variable was shown also in Table XXII. Additional significant differential effects exist, also, between comparisons of Moderate and High initial ability groupings.

Section Three

Objective Two: "To investigate relationships between measured improvement of students' reading abilities and selected student characteristics."

A within cells correlation matrix was produced by the Finn multivariance program, establishing correlations between independent variables and dependent and independent variables. Data presented in this section of Chapter IV will satisfy the requirements of Hypothesis Three of the study.

Hypothesis Three

> There are significant relationships between the measured improvement of the students' abilities and selected student characteristics.

This section will offer a presentation of correlations through a dual approach. To satisfy the tenets of Hypothesis Three, a correlation matrix of the relationships between the selected demographic variables, and the sixteen independent variables (test scores and corresponding grades) and the eight dependent variables (test score differences and corresponding grade differences) will be presented.

A second presentation of correlations will emphasize significant relationships that exist between:

- independent x independent variables
- independent x dependent variables
- dependent x dependent variables

The correlations between each of the selected six demographic variables and independent test and grade scores, produced by the Finn multivariance correlation method, are presented in the matrix in Table XXIII.

TABLE XXIII

CORRELATIONS AMONG DEMOGRAPHIC VARIABLES AND PRETEST--POSTTEST AND GRADE VALUES AND DIFFERENCES

(A) Demographic Variables	Reading Comprehension				Word Recognition			
	Pre-test	Grade	Post-test	Grade	Pre-test	Grade	Post-test	Grade
Hours of Instruction	.02	.03	.03	-.01	.25	.17	.19	.18
Age	.06	.00	.20	.19	.27	.29	.14	.12
Marital Status	.00	-.12	.17	.07	.06	.04	.20	.12
Amount of Schooling	.29	.24	.33*	.29	.07	.03	.30*	.26
Employed	.18	-.23	.05	-.03	.00	-.09	.27	.14
Living with Family	.04	.12	.06	.22	.05	.00	.24	.25

(B)	Vocabulary				Spelling			
	Pre-test	Grade	Post-test	Grade	Pre-test	Grade	Post-test	Grade
Hours of Instruction	-.02	.09	.39**	.41***	.04	.00	.00	.12
Age	.19	.27	.00	.04	-.24	-.27	-.26	-.20
Marital Status	-.04	.03	.28	.19	.14	.09	.30*	.23
Amount of Schooling	-.06	-.06	-.02	.03	.37**	.29	.35**	.26
Employed	.32*	.36**	.36**	.30*	.05	.04	.05	.02
Living with Family	.28	.15	.03	.13	-.09	-.09	-.12	-.06

***Significant at < .01 level

**Significant at < .05 level

*Significant at < .10 level

TABLE XXIII (Con't.)

Test Score Differences - $(T_2 - T_1)$'

(C)	Reading Comprehension	Word Recognition	Vocabulary	Spelling
Hours of Instruction	.06	.06	.42***	-.08
Age	.17	.15	.13	.01
Marital Status	.23	.19	.32*	.27
Amount of Schooling	.02	.30*	.02	-.06
Employed	.35**	.37**	.14	.00
Living with Family	.01	.26	-.15	-.03

***Significant at <.01 level
**Significant at <.05 level
*Significant at <.10 level

'Where: T_1 = Pretest score
T_2 = Posttest score

Grade Differences - $(G_2 - G_1)$'

(D)	Reading Comprehension	Word Recognition	Vocabulary	Spelling
Hours of Instruction	-.07	.01	.44**	.23
Age	.25	.17	.71	.06
Marital Status	.29	.08	.21	.28
Amount of Schooling	.00	.25	.09	.01
Employed	.32*	.26	.07	.02
Living with Family	.10	.03	.03	.02

**Significant at <.01 level
*Significant at <.10 level

'Where: G_1 = Pretest grade value
G_2 = Posttest grade value

Of the 104 correlation coefficients presented in Table XXIII, only sixteen are significant at a level of $p < .10$. It is therefore reasonable to assume that for this population, interacting with these literacy materials, few significant relationships exist between the six demographic variables and learning performance in the adult basic education literacy classes. It is of interest to note, however, the negative relationships that exist between an adult student being employed and the pretest and posttest grade for the Reading Comprehension variable. The students' amount of primary/secondary schooling is rather positively related to the variables delineating the Reading Comprehension and Spelling measures of literacy. A definite relationship exists between a student engaged in part-time or full-time employment and the Vocabulary test variables.

Worthy of mention also is the consistently negative relationship between the four variables delineating the Spelling measures of literacy and increasing age of the ABE students. The demographic variable "Living with Family" appears to be somewhat negatively related to development of an English vocabulary.

A significant relationship exists between the posttest grade in the Vocabulary measure of reading ability and the Hours of Instruction variable. Contrary to what might be expected, no other relationships exist between posttest measures of literacy achievement and the hours of instruction the students received in the ABE program.

Correlation coefficients between the demographic variables and the eight dependent variables formed through transformations by the

Finn multivariance program are presented in sections C and D of Table XXIII.

The following observations of these correlation coefficients seem to be worthy of mention.

1. A positive relationship seems to exist between the Reading Comprehension $D(T_2-T_1)$ and $D(G_2-G_1)$ and a student being employed.

2. As previously mentioned in the observations of sections A and B of Table I, a positive relationship (significant at .01 level) exists between the Vocabulary $D(T_2-T_1)$ and $D(G_2-G_1)$ and the Hours of Instruction variable.

3. There generally seems to be little to no relationship existing for Spelling measures of literacy and the demographic variables. Of the four sets of variables, the Spelling variables produced the lowest of correlation coefficients in combination with the six demographic variables.

When considering a correlation coefficient, it should be remembered that the degree of relationship represented by the correlation coefficient (r) is more meaningful when considered as the value of the square of the coefficient (r^2) instead of the coefficient itself. Thus a correlation of .50 represents a 25 per cent association and we can so state that 25 per cent of the variance of one variable is predictable from the variance of the other. Also to be considered is the functional versus causal relationships of correlations. The existence of a correlation between two variables is indicative of a functional relationship, but not necessarily a causal relationship. When a functional relationship can be regarded as a causal relationship is a point of interpretation open to question. Correlations are of value in research only when their meanings and implications are understood. This was the purpose for this brief review concerning the significance of correlations.

Relationships worthy of consideration between combinations of independent and dependent variables will be found in the correlation coefficients presented in Table XXIV.

A search for significant relationships between pretest and posttest scores for the four tests of reading ability revealed that the individual's pretest score is rather significantly related ($p < .001$) to his posttest score in three of the four tests. There seemed to be little relationship between an individual's pretest and posttest scores in the Vocabulary test. This relationship is indicated also in Table XXV. A distinctly positive relationship existed among both pretest and posttest scores on the Reading Comprehension and Word Recognition variables. The posttest scores on the Vocabulary and Word Recognition tests also were postively related. The least significant of relationships between pretest and posttest scores existed in the relationship of the Spelling pretest and posttest scores to all other like scores. Generally, it was shown in this matrix that the Reading Comprehension and Word Recognition

TABLE XXIV

CORRELATIONS BETWEEN INDEPENDENT PRETEST SCORES AND POSTTEST SCORES

	Reading Comp. Pretest	Posttest	Word Recog. Pretest	Posttest	Vocabulary Pretest	Posttest	Spelling Pretest	Posttest
Reading Comp. Pretest	---							
Posttest	.78**	---						
Word Recog. Pretest	.42*	.54**	---					
Posttest	.52*	.78**	.69**	---				
Vocabulary Pretest	.08	.16	.44*	.41*	---			
Posttest	.36**	.40*	.42*	.54**	.35++	---		
Spelling Pretest	.06	.22	.40*	.32+	.12	.25	---	
Posttest	.08	.29	.33+	.35*	.11	.23	.85**	---

**Significant at <.001 level

*Significant at < .01 level

++Significant at <.05 level

+Significant at <.10 level

variables were more reliable predictors of each other than they were of the Vocabulary and Spelling variables.

It would be advantageous for an ABE instructor to be able to predict to some degree the progress of students involved in literacy instruction. In a search for predictors of student learning progress in adult basic education classes, correlation coefficients for pretest scores and grades are presented in Table XXV. Data presented in Table XXV revealed significant relationships between pretest and posttest scores for three of the four general test variables.

TABLE XXV

CORRELATIONS BETWEEN INDEPENDENT PRETEST SCORES AND GRADES AS PREDICTORS OF POSTTEST SCORES AND GRADES

	Reading Comprehension			Word Recognition	
	Post-Score	Post-Grade		Post-Score	Post-Grade
Pre-Score	.78	.69	Pre-Score	.69	.70
Pre-Grade	---	.77	Pre-Grade	---	.57
	Vocabulary			Spelling	
	Post-Score	Post-Grade		Post-Score	Post-Grade
Pre-Score	.35*	.51	Pre-Score	.85	.87
Pre-Grade	---	.60	Pre-Grade	---	.84

r of .50 $>$ p $<$ .001 level

*Significant at$<$.05 level

Pretest scores are positively related to the posttest grades in all of the tests of reading ability (significant at .001 level). As was indicated in Table XXIV, there is a weaker relationship between pretest and posttest scores on the Vocabulary variable. This variable has the lowest coefficient of the four pretest score--posttest grade relationships. Pretest grades are also positively related to posttest grades as indicated in Table III and may be considered as indicators of future student achievement.

Summary

There appears to be little significant relationship between the demographic characteristics of the ABE study population and group test scores or corresponding grade values. Sporadic relationships of significance ($p < .05$) were found to exist between test scores and amount of learning and the variables Hours of Instruction and Employment. Pretest scores on the four test variables are significantly related (p of $< .001$ to $< .01$) as predictors of posttest scores for the four test variables. Pretest grade values have a highly significant relationship to posttest grade values and should function well as predictors of academic success for the student population being considered.

Section Four

Objective Three: "To identify the component parts of the selected literacy program materials."

Objective Four: "To determine the relative effectiveness of the component parts of the selected literacy program materials through systematic observation of the students in the teaching↔learning process.

To specifically determine:

a. the students' reaction to and acceptance of the component parts of the selected literacy programs.

b. the degree to which the component parts of the selected literacy programs create within the students the desire to participate and learn in the teaching↔learning process.

c. the effectiveness of the individual component parts in teaching English as a second language to ABE students."

The Mott and Sullivan literacy materials are composite programs constructed of various types of instructional exercises. For the purpose of this study, these exercises have been termed "component parts" and were defined as the inherent elements of the Mott and Sullivan ABE literacy programs that can be isolated and identified as giving direction, sequence and continuity to the process of reading instruction and/or in creating and maintaining a foundation or framework for development of reading skills.

From a detailed list of workbook exercises compiled from the Mott and Sullivan materials, combined lists of basic component parts were derived for the Mott Basic Language Skills Program and for the

Sullivan--Programmed Reading For Adults. The following lists of component parts were identified for the Mott and Sullivan programs.

Sullivan Programmed Reading For Adults

Books 3, 4, 5, 6, 7

1. Matching Words and Pictures Exercise
2. Rhyme (sounds like) Exercise
3. Fill in the Missing Letters and Words Exercise
4. Yes-No Questions Exercise
5. Illustration and Narrative Exercise

Mott Basic Language Skills Program

Series 300, 300A, 300B

1. Photo Identification and Vocabulary Exercise
2. Photo-Narrative and Question Exercise
3. Spelling Exercise
4. Phonics Exercise
5. Fill-in-the-Blanks Exercise
6. Reading and Writing Exercise
7. Reading and Questions Exercise

Mott Basic Language Skills Program

Series 600A, 600B, 900A, 900B

1. English Grammar Exercise
2. Reading and American Scene Exercise
3. Word Study and Everyday Words Exercise
4. Spelling Exercise
5. Student Assignment Exercise

Examples of the component parts that were identified as the major curriculum elements of the Mott and Sullivan literacy programs can be found in the Appendix.

Systematic observation of randomly selected ABE students was performed by each of the five instructors through the use of specific scales which appear on the chart of the following page. A total of

Scales Used in Component Part Observations

Number	Scale				
1	( ) all of the time	( ) most of the time	( ) some of the time	( ) little of the time	( ) none of the time
2	( ) much difficulty	( ) some difficulty	( ) little difficulty	( ) no difficulty	
3	( ) very challenging	( ) moderately challenging	( ) infrequently challenging	( ) presents no challenge	
4	( ) maintains high motivation	( ) average motivation	( ) ineffective motivation		
5	( ) all words correct	( ) majority of words correct	( ) few words correct	( ) no words correct	
6	( ) much too difficult	( ) probably too difficult	( ) appropriate	( ) probably too elementary	( ) much too elementary
7	( ) of great value	( ) of some value	( ) of doubtful value	( ) of no value	

twenty-seven observations of students working with the Mott program and twenty-eight observations of students working with the Sullivan program were made by the five ABE instructors. Observations in sufficient quantity were made on twelve of seventeen previously identified component parts and thereby warrant reporting in this section.

The following component parts of the Sullivan--Programmed Reading For Adults literacy materials were rated through student observation by the ABE instructors:

Matching Words and Pictures Exercise
Fill in Missing Letters and Words Exercise
Yes-No Questions Exercise
Illustration and Narrative Exercise

The observations and resultant judgments of the effectiveness of these Sullivan component parts by the ABE instructors are recorded in the tables that follow. Only observation-ratings with a frequency of two or greater were deemed significant and thus reported.

TABLE XXVI
INSTRUCTOR OBSERVATIONS:
MATCHING WORDS AND PICTURES EXERCISE

Function of Component Part	Scale	Instructor Observations (10 Observations)
Fostering student interest and motivation	1	5 obser.-"All of the time" 4 obser.-"Most of the time"
Leading student to correct programmed response	1	8 obser.-"Most of the time"
Student's ability to associate correct words with picture objects	1	8 obser.-"Most of the time" 2 obser.-"Some of the time"
Student's ability to match correct word with correct pictures	2	6 obser.-"Some difficulty" 3 obser.-"Little difficulty"
General effectiveness of the programmed component part	3	9 obser.-"Very challenging"
	4	8 obser.-"Maintains high motivation" 2 obser.-"Maintains aver. motivation"

TABLE XXVII

INSTRUCTOR OBSERVATIONS: FILL IN MISSING LETTERS AND WORDS EXERCISE

Function of Component Part	Scale	Instructor Observations (13 observations)
Fostering student interest and motivation	1	9 obser.-"All of the time" 4 obser.-"Most of the time"
Leading student to the correct programmed response	1	6 obser.-"All of the time" 7 obser.-"Most of the time"
Student's ability to associate correct words with correct illustrations	1	5 obser.-"All of the time" 6 obser.-"Most of the time" 2 obser.-"Some of the time"
Student's ability to identify letter combination sounds	2	10 obser.-"Some difficulty" 3 obser.-"Little difficulty"
Student's ability to select correct letters/words to fill-in-the-blanks	2	3 obser.-"Some difficulty" 8 obser.-"Little difficlty" 2 obser.-"No difficulty"
General effectiveness of programmed component part	3	4 obser.-"Very challenging" 9 obser.-"Moderately challenging"
	4	10 obser.-"Maintains high motivation" 2 obser.-"Maintains aver. motivation"

3

TABLE XXVIII

INSTRUCTOR OBSERVATIONS: YES - NO QUESTIONS EXERCISE

Function of Component Part	Scale	Instructor Observations (7 observations)
Fostering student interest and motivation	1	4 obser.-"All of the time" 3 obser.-"Most of the time"
Leading student to correct programmed response	1	5 obser.-"All of the time" 2 obser.-"Most of the time"
Student's ability to associate correct words with correct illustrations	1	3 obser.-"All of the time" 4 obser.-"Most of the time"
General effectiveness of the programmed component part	3	6 obser.-"Moderately challenging"
	4	4 obser.-"Maintains high motivation" 3 obser.-"Maintains aver. motivation"

TABLE XXIX

INSTRUCTOR OBSERVATIONS: ILLUSTRATION AND NARRATIVE EXERCISE

Function of Component Part	Scale	Instructor Observations (12 observations)
Fostering student interest and motivation	1	8 obser.-"All of the time" 4 obser.-"Most of the time"
Leading student to correct programmed response	1	5 obser.-"All of the time" 7 obser.-"Most of the time"
Student's ability to associate correct words with correct illustrations	1	7 obser.-"All of the time" 5 obser.-"Most of the time"
Student's ability to select correct words to answer narrative questions	2	2 obser.-"Some difficulty 8 obser.-"Little difficulty 2 obser.-"No difficulty
General effectiveness of programmed component part	3	3 obser.-"Very challenging" 9 obser.-"Moderately challenging"
	4	5 obser.-"Maintains high motivation" 7 obser.-"Maintains aver. motivation"

Discussion

As effective units of the Sullivan literacy program, the four component parts on which observations were reported were generally rated as highly effective with the Spanish-speaking, Mexican-American students. When considering the effect of the component parts on student motivation and interest, the instructors rated the four component parts as encouraging student motivation and interest 60 per cent "All of the time" and 40 per cent "Most of the time." Special comment was made in nineteen observations by instructors that a "high degree of motivation" and "constant application" were exhibited by the observed students.

A basic tenet of programmed instruction is the successful guidance of the student through the programmed sequence of material. The ABE instructors rated the degree to which the Sullivan programmed sequence successfully led the students to the correct responses as 42 per cent "All of the time" and 58 per cent "Most of the time." It was generally noted by the instructors that students in the low literacy level instructional groups experienced greater difficulty in following the programmed sequence.

A high percentage of the Sullivan programmed instruction relies upon association and application of words to the illustrated word objects. When considering the component parts in regard to the students' ability to match the correct word with the proper word object or illustration, the instructors rated the four component parts as achieving this 40 per cent "All of the time," 52 per cent "Most of the time," and 8 per cent "Some of the time." The component parts, Matching Words and Pictures and Fill in Missing Letters and Words, were rated weakest in this particular function of the Sullivan programmed instruction.

The students were rated as having "Some difficulty" in 71 per cent of the observations in identifying letter and letter combination sounds in the exercises. These observations seem to support the special comment offered by instructors in four observations that the students needed "phonics exercises to assist them with the sounds of the alphabet."

The instructors reported that students had "Some difficulty" in selecting the correct letters and/or words to complete Fill-in-the Blanks Exercises in 28 per cent of the observations, had "Little difficulty" in 54 per cent of the observations, and had "No difficulty" in 14 per cent of the observations. Instructors offered nine comments to the effect that "special vocabulary exercises were needed" to provide students with both a larger vocabulary and greater ability to spell words in English.

Two scales were employed in securing an indication of the general effectiveness of the Sullivan programmed instruction. The instructors rated the overall programmed approach as "Very challenging" in 41 per cent of their observations and as "Moderately challenging" in 59 per cent of their observations. In securing an overall judgment of the effects of the programmed instruction on student motivation, the instructors rated the material as "Maintaining high motivation" in 64 per cent of their observations and as "Maintaining average motivation" in 36 per cent of their observations. The instructors offered numerous comments to this researcher that the programmed materials "seemed" to maintain a high degree of student interest and required that much less time be devoted to individual student teacher interchange and student assistance than did the standard workbook approach.

The following component parts of the Mott Basic Language Skills Program, Series 300, 300A and 300B, were rated by the ABE instructors:

Photo Identification and Vocabulary Exercise
Photo-Narrative and Question Exercise
Spelling Exercise
Phonics Exercise
Fill-in-the Blanks Exercise
Reading and Questions Exercise

The observations and resultant judgments of the instructors concerning the educational effectiveness of these Mott component parts are reported in the tables that follow. Observations occurring with a frequency of two or greater were deemed significant and thus reported.

TABLE XXX

INSTRUCTOR OBSERVATIONS
PHOTO IDENTIFICATION AND VOCABULARY EXERCISE

Function of Component Part	Scale	Instructor Observations (10 observations)
Student's ability to match photo and words and use in a sentence	1	3 obser.-"All of the time" 7 obser.-"Most of the time"
Student's ability to select correct photo-word from narrative	1	6 obser.-"Most of the time" 4 obser.-"Some of the time"

TABLE XXXI

INSTRUCTOR OBSERVATIONS:
PHOTO - NARRATIVE AND QUESTION EXERCISE

Function of Component Part	Scale	Instructor Observations (15 observations)
Student's ability to match photo and words in narrative	1	3 obser.-"All of the time" 12 obser.-"Most of the time"
Student's ability to select correct photo-word to answer questions	1	10 obser.-"Most of the time" 5 obser.-"Some of the time"

TABLE XXXII

INSTRUCTOR OBSERVATIONS: SPELLING EXERCISE

Function of Component Part	Scale	Instructor Observations (15 observations)
Student's success with the spelling exercises	5	6 obser.-"Majority of words correct 8 obser.-"Few words correct"

TABLE XXXIII

INSTRUCTOR OBSERVATIONS: PHONICS EXERCISE

Function of Component Part	Scale	Instructor Observations (15 observations)
Student's ability to identify sounds of letter(s) in word lists and sentences	2	7 obser.-"Much difficulty" 6 obser.-"Some difficulty" 2 obser.-"Little difficulty"

TABLE XXXIV

INSTRUCTOR OBSERVATIONS: FILL-IN-THE-BLANKS EXERCISE

Function of Component Part	Scale	Instructor Observations (23 observations)
Student's ability to select correct words/letters to complete exercises	2	12 obser.-"Much difficulty" 6 obser.-"Some difficulty" 3 obser.-"Little difficulty" 2 obser.-"No difficulty

TABLE XXXV
INSTRUCTOR OBSERVATIONS:
READING AND QUESTIONS EXERCISE

Function of Component Part	Scale	Instructor Observations (17 observations)
Student's ability to understand reading passages and correctly respond to questions	2	11 obser.-"Much difficulty" 6 obser.-"Some difficulty"

Discussion

The six component parts of the Series 300 Mott Basic Language Skills Program, on which observations were made by the ABE instructors, generally were rated as rather difficult and inappropriate for the hard-core functionally illiterate student. Students generally achieved the highest degree of success in observations made on the component part Photo Identification and Vocabulary Exercise. Students achieved success in matching correct photographs and words "All of the time" in 30 per cent of the observations and "Most of the time" in 70 per cent of the observations. Expanding this basic recognition ability, the students were observed to be able to select the correct photo-word from a narrative passage "Most of the time" in 60 per cent of the observations and "Some of the time" in 40 per cent of the observations. Four special observations were recorded by instructors concerning contextual difficulties their students experienced in proper word usage with this exercise.

An increasing amount of difficulty was observed to be experienced by the ABE students when working with the Photo Narrative and Question

Exercise component part. The instructors observed student difficulty in many cases because of little contextual understanding of words. Students were observed to be successful in relating photographs to words contained in a narrative "Most of the time" in 80 per cent of the observations. Students experienced greater difficulty in selecting photo-word answers to questions concerning the narrative passage, achieving a success of 60 per cent "Most of the time" and 33 per cent "Some of the time" in a total of fifteen observations.

The Spelling Exercise was a component part with which most functionally illiterate students experienced varied success. Students were observed to be about equally divided between achieving "Majority of words correct" and "Few words correct" in the spelling exercise.

The ABE students were observed as having "Much difficulty" with comprehension of the Phonics Exercise in 50 per cent of the observations. Forty per cent of the students were rated as experiencing "Little difficulty" in observations of this component part. Due to severely limited vocabularies, most ABE students, instructors reported, were confused by the extensive lists of words utilized in demonstrating the sounds of letter and letter combinations in the Phonics Exercise component part.

Instructors reported some reluctance on the part of their students to attempt to Fill-in-the-Blanks Exercise. In 50 per cent of the observations, ABE students were observed to experience "Much difficulty" in selecting the proper word(s) and/or letters to successfully complete an exercise. Twenty-five per cent of the students were observed experiencing "Some difficulty" in exercise completion.

The component part with which students experienced the greatest difficulty was the Reading and Questions Exercise. After reading a specific narrative, 66 per cent of the students were observed as experiencing "Much difficulty" in correctly responding to the questions. Students were rated as experiencing "Some difficulty" in satisfactorily responding to questions in 33 per cent of the observations. Instructors reported a large incidence of student confusion with this component part. Instructors attributed this confusion to students possessing poor English vocabularies and lacking accurate knowledge of word meanings. A weakness of this component part, observed by several instructors, was an ambiguity in what words were actually required to satisfactorily complete the questions. Several instructors felt that the associated vocabulary necessary for success with this component part was not realistic for the low achievement level of their students.

The Mott Basic Language Skills Program, Series 600 and 900, component parts were also rated by the ABE instructors through the use of appropriate scales listed on page 119. The effectiveness of the following component parts is reported in the succeeding section:

English Grammar Lesson
Reading and American Scene Exercise
Word Study and Everyday Words Exercise
Student Assignment Exercise

Their observations and ratings of the effectiveness of these Mott component parts are reported in the tables that follow. Instructor observations occurring with a frequency of two or greater were deemed significant and thus reported.

TABLE XXXVI

INSTRUCTOR OBSERVATIONS:
ENGLISH GRAMMAR LESSON

Function of Component Part	Scale	Instructor Observations (7 observations)
Student's ability to work through exercises without continued procedural guidance	1	2 obser.-"All of the time" 3 obser.-"Most of the time" 2 obser.-"Some of the time"
Level of difficulty and interest of lesson subject matter for the student	6	7 obser.-"Appropriate"
Student's ability to compose sentences and answer written questions	2	2 obser.-"Some difficulty" 4 obser.-"Little difficulty"
Student's ability to comprehend and use new vocabulary in context	2	3 obser.-"Some difficulty" 4 obser.-"Little difficulty"

TABLE XXXVII

INSTRUCTOR OBSERVATIONS:
READING AND AMERICAN SCENE EXERCISE

Function of Component Part	Scale	Instructor Observations (10 observations)
Student's ability to work through exercises without continued procedural guidance	1	3 obser.-"All of the time" 7 obser.-"Most of the time"
Level of difficulty and interest of reading selections for the student	6	2 obser.-"Probably too difficult" 7 obser.-"Appropriate"
Student's ability to comprehend and use new vocabulary in context	2	6 obser.-"Some difficulty" 2 obser.-"Little difficulty" 2 obser.-"No difficulty"

TABLE XXXVIII

INSTRUCTOR OBSERVATIONS:
WORD STUDY AND EVERYDAY WORDS EXERCISE

Function of Component Part	Scale	Instructor Observations (7 observations)
Student's ability to work through exercises without continued procedural guidance	1	2 obser.-"All of the time" 5 obser.-"Most of the time"
Level of difficulty and interest of word lists for the student	6	2 obser.-"Probably too difficult" 5 obser.-"Appropriate"
Student's ability to compose sentences and answer written questions	2	2 obser.-"Some difficulty" 5 obser.-"Little difficulty"
Student's ability to comprehend and use new vocabulary in context	2	6 obser.-"Little difficulty"

TABLE XXXIX

INSTRUCTOR OBSERVATIONS:
STUDENT ASSIGNMENT EXERCISE

Function of Component Part	Scale	Instructor Observations (13 observations)
Completion and value of student assignments	7	2 obser.-"Of great value" 11 obser.-"Of some value"

Discussion

Four component parts of the Series 600 and 900 Mott Basic Language Skills Program were observed by the ABE instructors and generally rated as effective in teaching ABE students to read and write.

In considering the students' ability to proceed through the workbook exercises without continued procedural guidance, the instructors observed that 9 per cent of their students worked without continued guidance "All of the time," 63 per cent worked without continued guidance "Most of the time," and 28 per cent worked without guidance only "Some of the time." A seemingly important observation offered by several instructors concerning these more advanced Mott workbooks was that their students felt a lack of transition between the component parts of a workbook unit.[5] These observations seem to support the suggestions made by several students that "a specific introduction to each workbook unit be offered at the beginning of the unit." Instructors felt that a specific introduction would serve to orient their students to the exercises that would follow.

Instructors rated the four component parts of the 600 and 900 Series as "Appropriate" in 82 per cent of their observations with reference to an interesting and realistic presentation of the lesson subject matter for the ABE student. In 18 per cent of their observations, the instructors rated the subject matter as "Probably too difficult."

Students were required to compose sentences using new vocabulary and provide written answers to questions in all of the 600 and 900

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[5] A workbook unit usually contains several pages of each of the component part exercises. Example: The Mott Series 600A workbook contains fifteen units; each unit containing component part exercises presented in a progressively more difficult sequence.

Series component parts. Instructors rated their students as experiencing "Some difficulty" with this requirement in 43 per cent of their observations. Students were rated as experiencing "Little difficulty" in 47 per cent of the observations and "No difficulty" in 10 per cent of the observations.

A similar requirement found throughout the four component parts, but specific to the component part Word Study and Everyday Words, was the expectation that students would be able to understand new vocabulary words and use them in the proper context. Students were rated as experiencing "Some difficulty" with understanding and using new vocabulary in 39 per cent of the instructors' observations. Fifty-two per cent of the students were rated as experiencing "Little difficulty" and 9 per cent as experiencing "No difficulty" with new vocabulary words.

Written student assignments were an additional component part in the 600 and 900 Series. Instructors rated the Student Assignment component part as being "Of some value" in 84 per cent of their observations.

In contrast to their feelings concerning the basic Mott workbook materials (300, A, B), the instructors indicated a higher level of satisfaction with the educational effectiveness of the more advanced workbook materials (600 and 900). It should be recognized, however, that there was in many instances an easily quantifiable difference in the literacy levels of the ABE students using the beginning and advanced Mott workbooks.

CHAPTER FIVE

SUMMARY, CONCLUSIONS, AND IMPLICATIONS

The present study was undertaken with the primary purpose of contributing to the creation of a more effective Adult Basic Education literacy curriculum. The study was conducted with full cooperation from the Wisconsin State Board of Vocational, Technical and Adult Education in two area schools, Kenosha Technical Institute and Waukesha County Technical Institute. Two ABE literacy programs, the Mott Basic Language Skills Program and the Sullivan--Programmed Reading For Adults, were selected as treatments to be administered to the study population. Data were collected through the administration of a pretest-posttest instrument, which measured selected primary reading abilities. Eight independent measures of reading ability were secured for the forty-two functionally illiterate adults who successfully participated in the study.

The Problem

The present study was conceived in an attempt to evaluate the educational effectiveness of two ABE literacy programs. In the emerging field of Adult Basic Education, the curriculum has been imbued with a plethora of instructional and supplementary materials, few of which have been submitted to evaluation or review with regard to appropriateness and educational effectiveness. This, then, is the purpose of this study: to evaluate the educational effectiveness of two ABE literacy programs with a selected clientele of functionally illiterate adults.

Characteristic of functionally illiterate adults is the often found orientation to a specific ethnic group or subculture within the broader context of society. Instruction of ABE students many times must be geared specifically to a subculture in order to achieve noticeable educational results. The S's involved in this study were Spanish-speaking, functionally illiterate adults of Mexican or Puerto Rican descent, who were learning English as a second language. The problem of the study focuses, then, on the educational effectiveness of two ABE literacy materials in teaching functionally illiterate adults English as a second language.

Design of the Study

The data utilized in this study were gathered from a sample of forty-two ABE students. The students were enrolled in five ABE classes at two area vocational and adults schools. The ABE students were assigned to literacy classes on the basis of their initial reading ability, which was determined by means of a pretest instrument measuring four primary reading abilities--Reading Comprehension, Word Recognition, Vocabulary, and Spelling. Within each of the five ABE classes, the adult students were randomly assigned to either the Mott or Sullivan literacy program treatments.[1] Each of the five ABE classes were assigned an experienced ABE instructor, who taught English as a second language using the literacy materials to which the student was assigned. The students were administered a posttest measuring the identified primary reading abilities on the termination date of the study at which time they had received an average of forty-eight hours of literacy instruction. Additional data pertaining to the effectiveness of the selected literacy programs were obtained through teacher observations of ABE students interacting with identified component parts of these programs. The data were analyzed by the use of the Finn multivariate analysis of variance program with respect to the hypotheses of the study.

Several weaknesses in research design threaten the findings of this study and should be considered before the presentation of the conclusions and implications of the research. The research design was weakened by lack of a control group of functionally illiterate Mexican-Americans. Without an established control function, it becomes more difficult to ascertain whether the $T_2 - T_1$ difference was due to history, maturation, pretesting, regression, interaction of variables, etc., or the literacy program treatments. Establishment of a functionally illiterate control group within the confines of the Mexican-American population was not feasible for this study. An additional threat to the study is the extent to which other instruction was responsible for gains in reading ability. The ABE students enrolled in the U.M.O.S. program at Kenosha Technical Institute received a varied schedule of vocational instruction in addition to literacy instruction, while the ABE students enrolled at Waukesha County Technical Institute received only literacy instruction. Strict control of the total educational input directed towards the students could not be maintained.

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[1] See the discussion of the experimental design on page 66.

For the results of this study to be of value, it should be assumed that the students were representative of the Mexican-American population in the urban centers of Kenosha and Waukesha. This assumption may be somewhat tenuous, however, since the students had already made the decision to declare their illiteracy by volunteering to enroll in the ABE programs. One should always consider the reliability of the measurement instrument when assessing the true worth of research results. While the ABLE test, used for assessing Vocabulary and Spelling abilities, reported a reliability with adult students of .91 and .95 respectively, no reliability data were reported for the Student Survey test which measured Reading Comprehension and Word Recognition abilities. An additional variable that might threaten the validity of the findings of this study is the lack of information concerning the ABE students' literacy level in their native language. It is feasible that a student may learn a second language more readily if he is literate in his native language. There are confounding variables that serve to threaten all social science research. The preceding section has presented what this researcher considers to be the major threats to the findings of this study.

Major Findings of the Study

Hypothesis One: An analysis of the data failed to produce evidence to support a rejection of the hypothesis that no significant differences in reading achievement existed between the ABE students who received the Mott Basic Language Skills Program treatment and those who received the Sullivan--Programmed Reading For Adults treatment. Students who received the Sullivan literacy program treatment achieved significantly higher posttest results than their Mott treatment counterparts on the Reading Comprehension measure of literacy. No difference in mean gain was shown to exist between the treatment groups on the remaining three variables of literacy: Word Recognition, Vocabulary, and Spelling.

Hypothesis Two: An analysis of the data failed to produce evidence to indicate an overall interaction between initial reading ability of the ABE students at the inception of the study and either of the literacy program treatments. Hypothesis two was rejected. One significant interaction was observed to exist between the low and moderate initial reading ability students and the Sullivan literacy program with regard to the development of an English vocabulary. The Sullivan program was observed to produce a lack of gain in the development of a more comprehensive English vocabulary with the lower ability adult students in the study.

Data not specifically relevant to Hypotheses One or Two were found to indicate a significant difference in amount of reading achievement among the five classes of ABE students. The most noticeable difference between the ABE classes was in student mean gains in the Word Recognition and Vocabulary test variables. Especially with these two variables, students with low initial reading ability learned less, while students with moderate and high initial reading abilities learned significantly more.

Hypothesis Three: Few significant relationships were found to support the hypothesis that there are significant relationships between the measured improvement of the student's ability and selected student characteristics. Hypothesis three was rejected. The following relationships were found to exist. A significant relationship existed between the student's amount of primary/secondary schooling and achievement on the Reading Comprehension and Spelling measures of reading ability. Hours of literacy instruction seemed to be significantly related to the student's successful development of an English vocabulary.

In search for predictors of future student achievement in literacy instruction, pretest scores were found to be positively significantly related to posttest measures of achievement for three of the four measures of reading ability. Pretest scores on the Word Recognition, Reading Comprehension and Vocabulary variables were significantly related to their respective posttest scores as valid predictors of student success.

Objective Four: Instructor observations of students engaged in the teaching⟷learning process produced subjective indications of the educational effectiveness of the Mott and Sullivan literacy programs.

The major component parts of the Sullivan literacy program were deemed highly relevant in presenting reading instruction to the functionally illiterate adult students. Separate instructor observations were secured for both the basic and more advanced series of the Mott literacy program. Instructors rated the major component parts of the basic Mott workbook series as difficult and inappropriate for functionally illiterate adults who are unable to communicate in English. The major component parts of the more advanced Mott workbook series were deemed quite effective in teaching adults to read and write in English.

Discussion and Conclusions

The results of the present study, taking into account the inherent weaknesses and shortcomings, permitted the drawing of several conclusions and implications relevant to an adult education curriculum. The conclusions, which are followed by related points of discussion, are as follows:

1. Research can be designed to test experimentally the educational effectiveness of adult basic education literacy materials. It is possible to involve functionally illiterate adults in experimental research without prejudicing the on-going literacy training program.

2. The Mott Basic Language Skills Program and the Sullivan--Programmed Reading For Adults literacy programs are effective in teaching functionally illiterate adults English as a second language,

after an average of forty-eight hours of instruction. On the average, the greater an adult's initial competency in English, the greater the adult's mean gain on the posttest measures of reading ability. Conversely, the lesser an adult's initial competency in English, the smaller the adult's mean gain on the posttest measures of reading ability.

This may be viewed as an unexpected result, as one would normally expect the extremely low scoring and high scoring students to regress toward the mean posttest score for the total group.[2] Success in learning English as a second language may be viewed as directly related to an adult student's initial ability with the language.

3. The divergent methods of the Mott and Sullivan literacy programs seem equally as effective in teaching English as a second language to functionally illiterate adults. It appears that the intensity of the student's self-motivation to learn English as a second language is a factor of great consequence in determining meaningful literacy achievement.

4. Students with varying initial abilities to communicate in English seem to respond equally as well to the Mott workbook approach and the Sullivan programmed approach to reading instruction. Well programmed literacy materials, however, seem to appeal to the initially less competent adults to a greater extent than do the standard workbook exercises.

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[2] See the results of the Greenleigh study on page 42. The Greenleigh study failed to find significant relationships between pretest scores and posttest scores as did this study, but did find a lack of regression towards a group mean.

5. Pretest examinations used to determine the literacy level of functionally illiterate adults can be considered as highly significant predictors of future student success. Highly significant relationships were found to exist between scores on several pretest measures of reading ability and subsequent posttest scores and grade equivalents.

6. Functionally illiterate adults should be regarded as serious, self-motivating students who recognize the advantages of literacy in their country's native language. In all instances, these students should be considered as adults who, although disadvantaged because of illiteracy, have the capability and desire to learn when presented with an opportunity for education.

There are numerous opportunities for error in drawing conclusions from small sample research. The conclusions here offered have been drawn with this limitation in mind. This research was specifically designed to test the effectiveness of literacy materials with Spanish-speaking adults. Conclusions and implications suggested by this research should be viewed within the context of non-English-speaking adults in a Mexican-American subculture. Contrary to opinions commonly held by many ABE instructors, the ABE students involved in this study were not averse to written examinations measuring their reading ability. The ABE instructor has a clearly defined role in preparing the adult student to be tested, and if performed properly, should allay their major fears of inadequacy and insecurity.

With respect to the possible threat of regression, where extreme individual pretest scores regress towards a grand mean on posttesting, the posttest results indicated that the highest scoring individuals learned more, while the lower scoring individuals learned less. Commenting on this unexpected finding, the ABE instructors felt that the more familiar that a functionally illiterate adult was with the English language, the better equipped he was to learn to communicate effectively in English. These results are substantially the same as those produced by Greenleigh and Associates in their nationwide literacy study in 1964.[3] A large variation about the grand means of test score and grade value gains on the measures of literacy, indicated by relatively large standard deviations, emphasizes the considerable variation in performance by the ABE students on the four measures of reading ability. The effect of the treatments on variation in performance could be measured, however, only by comparison to a control group.

Although the threat of "teacher effectiveness" as a confounding variable was lessened by assigning each instructor to teach both the Mott and Sullivan treatments, the role of the instructor still remains as an unquantifiable variable in affecting student gain in reading ability. A significant interaction between the Sullivan program and students with lower initial reading abilities, producing a definite lack of gain in vocabulary, could emphasize a shortcoming in the routine and less varied approach of the programmed teaching procedure. Maintenance of equal N's in all cells would tend to equalize the instructor's presentation of ABE material and minimize the threat of teacher--student interaction affecting gains in reading ability. Equal cell size, while possible to attain at the inception of an experiment, is relatively impossible to maintain with volunteer programs, especially with a disadvantaged subculture.

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[3] See page 42.

The simplicity of design of the programmed workbook approach to literacy instruction seemed to appeal to the adult students with less knowledge of the English language. It appears that a certain degree of literacy is required for successful interaction of student and workbook exercise. Adults possessing very little competence in English may well be predestined to do poorly on both the regular and programmed workbook exercises and thus show minimum gain on posttest measures of reading ability. In this instance, minimum student achievement should not be considered a shortcoming of the treatment program.

For students learning English as a second language, it appears that their initial competence with English predestines their achievement in learning the language. A significant relationship was found to exist between pretest and posttest measures of reading ability. It appears that closer grouping of students by ability level may weaken the apparent ceiling effect that level of preknowledge places on possible achievement.

It is the opinion of this researcher that the adult's intensity of self-motivation and desire to learn is the greatest factor determining success in learning English as a second language. For the most part, the ABE instructor is a cogent factor in the determination of the student's desire to learn English. This personal relationship between student and instructor is the common variable that weakens the validity of all educational research.

Implications For Further Research

The findings of this study are of little value without controlled replication of the research. While replication is all too often not encouraged in social science research, it remains here as the major recommendation. The following implications are suggested in consideration of future research in adult literacy education:

1. Inclusion of a control group function in future research designs should be strongly considered.

2. The literacy level of the ABE student in his native language should be considered as a cogent variable in future research with adults learning English as a second language.

3. Random selection of study participants, while admittedly quite difficult with functionally illiterate adults, should be attempted in future research.

4. A more exacting control over material and method of teaching would serve to lessen further the effect of teacher ↔ student interaction.

5. Attempts should be made to secure larger samples of functionally illiterate adults to involve in reading research.

6. A study to determine the effect of literacy instruction on the life space of adult students could possibly re-orient ABE curriculum materials.

7. A follow-up study to assess the level of literacy that was maintained by the ABE students after completion of formal instruction would further illuminate the effect of remedial education.

8. Some attention should be devoted to describing student attitudes concerning education, employment, family, society, etc. before and after participation in ABE programs.

9. Investigation of the ABE dropout, although extremely difficult, would probably reveal many shortcomings in present ABE curriculums.

Implications For Adult Basic Education

1. The ability to communicate in the language of one's current environment is a prerequisite for meaningful vocational education and re-education. Broad recognition and acceptance of this fact should place literacy instruction in a more favorable position in the educational world.

2. A study of the status of present ABE programs with reference to elementary, secondary, and higher education, and local and state government, would serve to define more clearly the future development of ABE literacy programs.

3. Past success with bilingual instruction suggests that ABE literacy materials that are prepared with English in combination with another language would effect a more rapid comprehension of the

English language.[4]

4. The careful preparation of literacy instructors, especially for specific subculture populations, will materially affect the quality of reading instruction.

5. The present paucity of research in adult basic education further emphasizes the need for the establishment of a continuing research program on the state and local levels. The rapid and systematic development of an effective ABE curriculum, avoiding the fragmented curriculum given elementary and secondary education, is a necessity if the educational establishment is to meet the demands of the educationally unprepared and disadvantaged segment of American society.

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[4] See page 31, Chapter II for a brief discussion of the use of bilingual instruction with Mexican-American students.

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APPENDIX A

CHECKLIST TO EVALUATE ABE READING MATERIALS

LIST I

BASIC READING PROGRAMS FOR ADULTS

Included here are programs for teaching basic reading skills to adults, listed by publisher. A completed Check List to Evaluate Adult Reading Materials follows each system. The complete Check List includes fifty items; but certain of the items are not applicable with all systems, so in practice the lists range from thirty-odd to fifty items. The complete Check List is given first for information purposes. Publishers addresses are given after List VI. Series names are set entirely in caps.

Check List to Evaluate Adult Basic Reading Materials

yes no 1. materials have an adult appearance

yes no 2. covers mark the owners as illiterates

yes no 3. contents reflect adult tastes and interests

yes no 4. contents reflect adult basic education need for acculturation and resocialization

yes no 5. presents problems of social maintenance as filling in forms, keeping accounts, making time purchases

yes no 6. presents citizenship or civic responsibility content

yes no 7. presents problems of social adjustment

yes no 8. presents special information such as technical content suitable for specific trades or job descriptions

yes no 9. suitable for English as a second literate language class

yes no 10. placement test(s) included in materials

yes no 11. placement test easily administered

yes no 12. placement test quickly places individual into materials at appropriate level of difficulty

yes no 13. materials programed

yes no 14. includes practice reading materials

yes no 15. practice readings are short

yes no 16. practice reading includes comprehension questions

yes no 17. failure in program difficult

yes no 18. sequentially organized skill building

yes no 19. includes phonic skill training

yes no 20. includes context skill training

yes no 21. includes word analysis skills by word form

yes no 22. includes dictionary skills

yes no 23. includes other fact locating skills such as reading telephone directories

yes no 24. includes map or graph reading training

yes no 25. includes list of vocabulary introduced

yes no 26. vocabulary taken from a standard frequency list such as the Lorge or Mitzel list

yes no 27. vocabulary list analyzed according to frequency by standard list, i.e., how many taken from 1st 500, etc.

yes no 28. includes teaching manual

yes no 29. manual includes lesson plans

yes no 30. manual includes teaching methods

yes no 31. manual describes organization of material

yes no 32. provides means for self evaluation

yes no 33. self evaluation is frequent

yes no 34. self evaluation is part of learning program

yes no 35. includes handwriting training and practice

yes no 36. includes speech training and practice

yes no 37. pupil works mainly by himself with minimum of teacher help

yes no 38. group work supports the effort of individual

yes no 39. materials have been field tested

yes no 40. population upon which materials tested is described

yes no 41. results of field testing are reported

yes no 42. materials have been revised according to results of field testing

yes no 43. illustrations augment instruction

yes no 44. illustrations are tasteful

yes no 45. illustrations are clearly and unambiguously related to text

yes no 46. materials are durable

yes no 47. materials are inexpensive

yes no 48. materials are consumable

yes no 49. style of type is pleasing

yes no 50. layout design is pleasing

APPENDIX B

INSTRUCTOR OBSERVATION RECORDS

TEACHER OBSERVATION RECORD

General Instructions

This study is concerned with the educational effectiveness of the component parts pf the Mott and Sullivan ABE literacy materials as well as the overall effectiveness of the program materials. It is of interest to this study to have a record of the student's reaction to these individual component parts.

The purpose of these observation records is to structure your observations of the students in your classroom. The following procedure should be followed. Select one student for observation during each period of instruction. Do not select the same student for a second observation until you have observed each student in your class for the first time.

As time and normal classroom instruction procedures permit, try to observe the student as he works with the reading instruction materials. Try to orient your observations around the questions posed on the observation record.

Some questions will be relevant to the particular component parts on which the student is working. Other questions will not be applicable to the particular material on which you observe the student working. Make observations only for those questions that are applicable.

At the conclusion of this study we should have a series of systematic observations that can be summarized into relevant implications and generalizations concerning effectiveness of the individual component parts of the Mott and Sullivan reading materials for ABE students.

TEACHER OBSERVATION RECORD
FOR MOTT SERIES 300, 300A, 300B

Student Observed ______________________________ Date ______________

Pages in workbook on which the student is working ________ Series 300 300A
300B
(please circle)

The reading instruction exercises listed below have been identified as general component parts of the Mott 300, 300A and 300B reading materials. Observation should be made with reference to the student's learning involvement with these identified component parts.

1. Photo identification and vocabulary exercise
2. Photo narrative and question exercise
3. Spelling exercise
4. Letter combinations exercise
5. Fill-in-the-blanks exercise
6. Reading and writing exercise
7. Reading and questions exercise

- -

OBSERVATIONS

(300) 1. Is the student able to identify the correct photo-word and use it in a sentence?

	( )	( )	( )	( )	( )
(✓)	all of the time	most of the time	some of the time	little of the time	none of the time

(300) 2. Is the student able to select the correct photo-words from the narrative?

	( )	( )	( )	( )	( )
(✓)	all of the time	most of the time	some of the time	little of the time	none of the time

(300) 3. Do the workbook exercises prepare the student to master the spelling exercises? The student achieves:

	( )	( )	( )	( )
(✓)	all words correct	majority of words correct	few words correct	no words correct

(300A) 4. Is the student able to identify the letter combination sounds in
(300B) the word lists and sentences?

(✓) ( ) much difficulty ( ) some difficulty ( ) little difficulty ( ) no difficulty

(300A) 5. Is the student able to select the correct words to complete the
(300B) fill-in-the-blanks and missing letter exercises?

(✓) ( ) much difficulty ( ) some difficulty ( ) little difficulty ( ) no difficulty

(300A) 6. Can the student understand the reading passages and correctly
(300B) answer the questions about the passages and their content?

(✓) ( ) much difficulty ( ) some difficulty ( ) little difficulty ( ) no difficulty

7. Describe in as few words as possible the student's classroom learning behavior today.

____

____

8. What unusual behavior occurred today that would be of interest to this study? (concerning the observed student)

____

____

TEACHER OBSERVATION RECORD

FOR MOTT SERIES 600 & 900

Student Observed ______________________________ Date ______________

Pages in workbook on which the student is working ________ Series

600A 600B
900A 900B
(please circle)

The reading instruction exercises listed below have been identified as general component parts of the Mott 600 and 900 series *reading materials.* Observations should be made with reference to the student's learning involvement with these identified component parts.

1. English grammar lesson exercise
2. Reading and American Scene exercises
3. Word study and Everyday words exercises
4. Spelling exercise
5. Student assignment exercise

- -

1. Does the student comprehend the instructions for the exercises and is he able to work through the exercises without further procedural guidance?

(✓) ( ) all of the time ( ) most of the time ( ) some of the time ( ) little of the time ( ) none of the time

2. Is the lesson subject matter interestingly and realistically presented for the student?

(✓) ( ) much too difficult ( ) probably too difficult ( ) appropriate ( ) probably too difficult ( ) much too difficult

3. Are the reading exercises interestingly and realistically presented for the student?

(✓) ( ) much too difficult ( ) probably too difficult ( ) appropriate ( ) probably too difficult ( ) much too difficult

4. Is the student able to compose new sentences and answer written questions posed in the exercises? The student has:

	( )	( )	( )	( )
(✓)	much difficulty	some difficulty	little difficulty	no difficulty

5. Is the student able to understand the meaning of new words and utilize them in the proper context in the exercises following the lessons?

	( )	( )	( )	( )
(✓)	much difficulty	some difficulty	little difficulty	no difficulty

6. Are the student assignments completed and of value to this student?

Completed? Yes____ No____ ( )

	( )	( )	( )	( )
(✓)	of great value	of some value	of doubtful value	of no value

7. Describe in as few words as possible the student's general learning behavior in the classroom today.

____

____

8. What unusual behavior occurred today that would be of interest to this study? (concerning the observed student)

____

____

TEACHER OBSERVATION RECORD

FOR SULLIVAN MATERIALS

Student Observed ________________________ Date ______________

Pages in the workbook on which the student is working ______________

Book 3, 4, 5, 6, 7
(please circle)

The reading instruction exercises listed below have been identified as general component parts of the Sullivan programmed reading materials. Observations should be made with reference to the student's learning involvement with these identified component parts.

1. Matching words and pictures exercise
2. Rhyme (sounds like) exercise
3. Fill in the missing letters and words exercise
4. Yes -- No questions exercise
5. Single and multiple illustration narrative exercise

---

1. Is the material on which the student is working able to keep him interested and motivated?

	( )	( )	( )	( )	( )
( )	all of the time	most of the time	some of the time	little of the time	none of the time

2. Does the programmed instruction effectively lead the student to the correct response without his first referring to the answer column?

	( )	( )	( )	( )	( )
( )	all of the time	most of the time	some of the time	little of the time	none of the time

3. Is the student able to associate the correct word with the object(s) illustrated in the picture?

	( )	( )	( )	( )	( )
( )	all of the time	most of the time	some of the time	little of the time	none of the time

4. Is the student able to identify letter sounds and letter combination sounds in the sentence and word exercises?

(✓) ( ) much difficulty ( ) some difficulty ( ) little difficulty ( ) no difficulty

5. Is the student able to select the correct letters and/or words to complete the fill-in-the-blanks and word-choice exercises?

(✓) ( ) much difficulty ( ) some difficulty ( ) little difficulty ( ) no difficulty

6. What is the general effectiveness of the programmed instruction with this student?

A. Challenge to the student:

(✓) ( ) very challenging ( ) moderately challenging ( ) infrequently challenging ( ) presents no challenge

B. Degree of student motivation:

(✓) ( ) maintains high motivation ( ) average motivation ( ) ineffective motivation

7. Describe in as few words as possible the student's general learning behavior in the classroom today.

____

____

8. What unusual behavior occurred today that would be of specific interest to this study? (concerning the observed student)

____

____

APPENDIX C

MOTT BASIC LANGUAGE SKILLS PROGRAM [*]

SERIES 300 - A - B

COMPONENT PARTS

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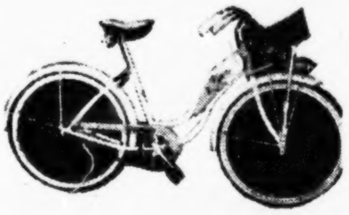
PHOTO IDENTIFICATION AND VOCABULARY EXERCISE



BICYCLE

bicycle

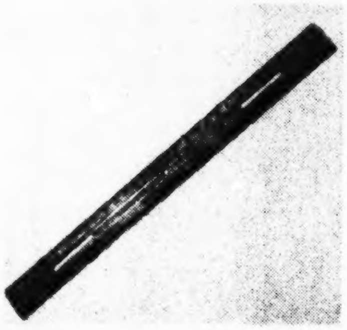
bicycle ____________

My bicycle will go fast.

The red bicycle is mine.

____

____



RULER

ruler

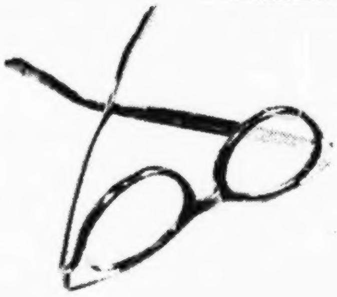
ruler ____________

A ruler is 12 inches long.

The woman needs a ruler.

____

____



PASSES

CLASSES

GLASSES

He can see better with his new ______.

Sam will soon have new ___________.

____

____

BOOM

BOOT

BOOK

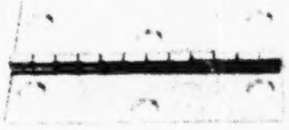
Look at page seven in your _______.

He will take his _______ with him.

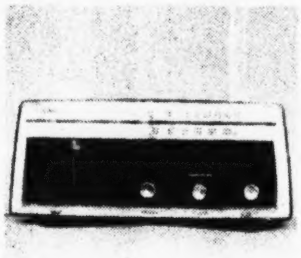
____

____

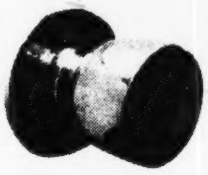
PHOTO--NARRATIVE AND QUESTION EXERCISE



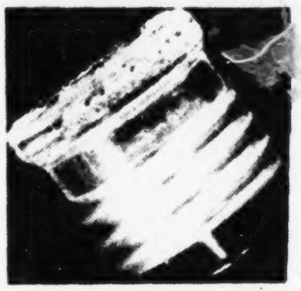
1. ____________



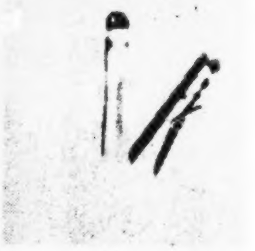
2. ____________



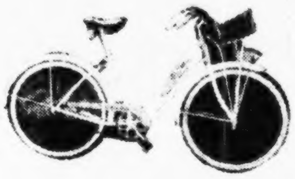
3. ____________



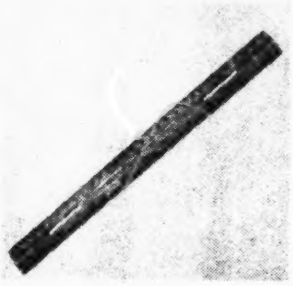
4. ____________



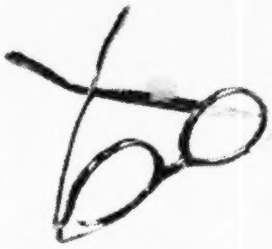
5. ____________



6. ____________

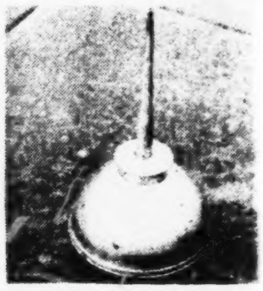


7. ____________



8. ____________

9. ____________



10. ____________

NEW HOBBY

The gate hung by one hinge as Tim rode into the yard on his bicycle. His sister, Peg, was hanging some clothes on the line with clothespins. Tim took off his glasses and laid his book and ruler on the back steps.

"Peg," he said, "do you know what Dad plans to do this evening?"

"Sure," Peg answered. "I heard him saying that he and Mom want to take one day each week to do useful things. You know, things like hobbies."

"That's great," Tim answered. "I'm all for that!"

At seven o'clock, Peg took her small radio into the bedroom where her mother kept her sewing machine. She

QUESTIONS

Fill in the blank:

1. Peg was hanging clothes on the line with ____________
   ____________________.
2. Peg took what into the bedroom?________________________
3. Mother lit the candle with ________________________.

PHONICS EXERCISE

SOUNDS OF "ALT," "ALK," AND "ALL"

1	2	3	4	5
all	gall	tall	salt	walk
hall	wall	small	malt	balk
call	ball	stall	Walt	chalk
mall	fall	squall	halt	stalk

ball

1. "Chalk up a win for the Red Sox," said Tom.
2. "Could you walk to town with me?"
3. We can get a malted milk at the corner.
4. Saul is a tall, gaunt man.

FILL-IN-THE-BLANKS EXERCISE

PUT "HAS" or "HAVE" WITH A WORD AND FILL IN THE BLANKS.

I have
he has
we have
you have
she has
it has
they have

balked
drawn
crawled
hauled
pawned
yawned
launched
walked
daubed
talked

1. The trucks __________ __________ a lot of dirt.
2. They __________ __________ the sub.
3. The girls __________ __________ about going to the ball.
4. The team __________ __________ on the west road.
5. They __________ __________ the beets to market.
6. The artist __________ __________ on the canvas.
7. The ants __________ __________ into the picnic basket!
8. Ted __________ __________ until he has fallen asleep.
9. Jack __________ __________ his best ring.
10. They __________ __________ around the block.

READING AND WRITING EXERCISE

SOUND OF "AI"

READ AND WRITE.		ADD "ED"	ADD "ING"
1. bait	bait	baited	baiting
2. stain			
3. wait			
4. nail			
5. raid			
6. air			
7. pair			
8. paint			
9. fail			

1. Bait was used to catch the rat.

2. The stain would not come out.

3. We waited for the rain to stop.

4. Jim stepped on a nail.

5. An air raid alarm

sounded in the town.

6. A pair of cooing birds

sat in the tree.

READING AND QUESTIONS EXERCISE

Unit 4

THE BERLIN WALL

NEW WORDS: citizens
communist peace

After World War II, Berlin, Germany was a torn and burned-out city. It had become a pawn in the cold war between Russia and the West. Russia took the eastern part of the city while the Western Powers took the western part, which was 110 miles inside the borders of East Germany.

West Berlin was soon lifted up from the dirt and trash left from the bombings and grew into a lovely new city of parks and lawns. Sprawling new offices and apartments flaunted their sparkling walls to East Berlin which lay gaunt and still and almost dead. Its citizens by the thousands fled to West Berlin to flee from the stern communist laws.

To stop this stream of people to the west and freedom, on August 13, 1961, the communists started to put up a wall between the two parts of the city. Bricks and blocks, with barbed wire drawn taut above, halted the crowds seeking freedom in the west. Some people crawled over in the dark, some jumped from tall houses on the borders, others swam across the river. Many who started out, never saw the gleaming malls or crowded shops they so longed to walk in or the clean, cool parks and green trees that seemed to call to them. They were caught by the drawn guns of alert guards or the jaws of snarling dogs.

Will this torn city forever bear the scar of an ugly wall cutting through it? Or will men one day walk in peace and freedom from border to border?

UNDERSTANDING WHAT WE READ:

1. Why was the wall built in Berlin? ____________________
2. What is the difference between East and West Berlin?
____
3. When was the wall started? ____________________

MOTT BASIC LANGUAGE SKILLS PROGRAM [*]

SERIES 600 and 900

COMPONENT PARTS

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GOOD USAGE

TO, TWO, TOO

TO: Use like this: I went to work
Mary went to the store.
TWO: As a number: My youngest child is two years old.
Mary bought two loaves of bread.
TOO: This means "in addition to," or "more than enough."
I would like to go too.
She has on too much makeup.

FILL IN THE BLANKS BELOW WITH "to," "two," OR "too."

1. You gave me________________much ice cream.
2. ________________of the men went home ill.
3. They were unable___________work.
4. They were______________sick to continue.
5. There are__________________ jets in the sky.
6. I would like to fly______________________.

ITS AND IT'S

IT'S: A CONTRACTION MEANING IT IS.

EXAMPLE: It's a gloomy day.
It's time to go home.

ITS: USED TO SHOW POSSESSION.

EXAMPLE: The car is red. Its tires are white.
The train raced through town, its whistle shrieking.

FILL IN THE BLANKS BELOW WITH "it's" OR "its."

1. ________________time for us to go home.
2. The baseball team is doing______________best.
3. The city is proud of______________school.
4. ______________almost time for winter to begin.
5. The house is all cleaned up;______________windows sparkle.

SPELLING EXERCISE

SPELLING

WRITE EACH WORD IN SYLLABLES IN THE SPACE PROVIDED. ON ANOTHER SHEET OF PAPER, WRITE A SENTENCE FOR EACH WORD.

1. catchword ______________________________
2. establish ______________________________
3. hazardous ______________________________
4. metropolitan ______________________________
5. senseless ______________________________
6. defiance ______________________________
7. radiate ______________________________
8. accumulation ______________________________
9. inviting ______________________________
10. sympathetic ______________________________
11. continuing ______________________________
12. befuddle ______________________________
13. false ______________________________
14. neutralize ______________________________
15. different ______________________________

WORD STUDY AND EVERYDAY WORDS EXERCISE

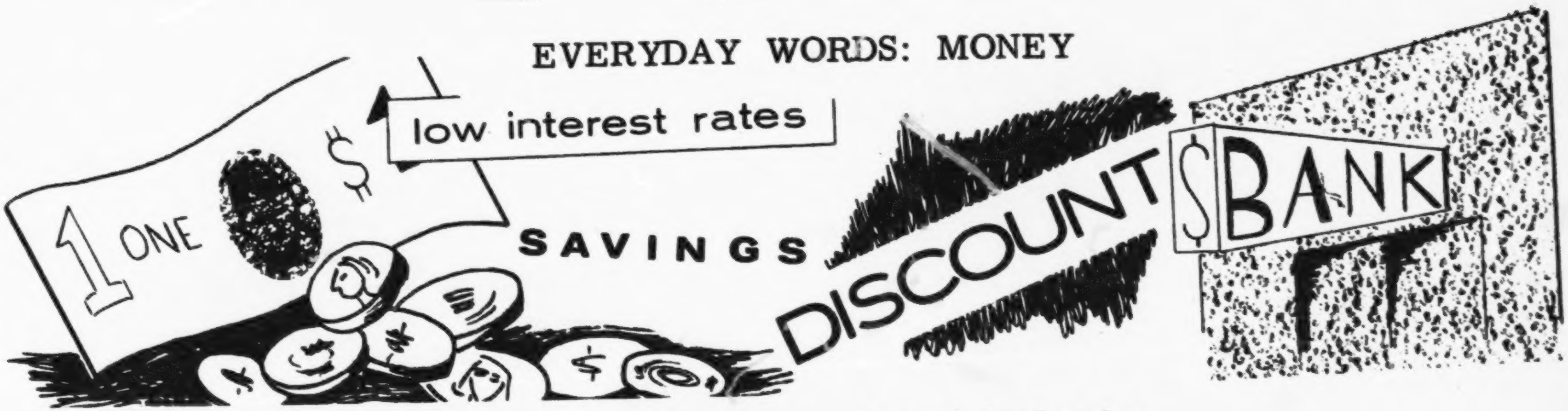
WORD STUDY

1.	misunderstanding	Because Betty did not agree with what Jean had said, there was a misunderstanding between them.
2.	sanitary	The hospital had the "sanitary" look.
3.	utensils	All of Jane's cooking utensils were new.
4.	benefit	A fringe benefit is payment other than wages, such as a vacation or insurance.
5.	qualify	Because of his training, Arvin will qualify for the job.
6.	harvesting	The harvesting of crops usually occurs in the late summer.
7.	temporary	It was a temporary lay-off from the factory.
8.	hardwood	This maple is a hardwood tree.
9.	explanation	Sara gave an explanation for being late to work.
10.	number	The number attending the party was thirty-two.
11.	furnish	We will furnish the living room first with a sofa and two chairs.
12.	stretch	Betty will attempt to stretch her food allowance so it will last until the end of the week.
13.	remodeling	Ron was remodeling the living room by painting and adding new doors.
14.	cancer	Doctors are trying to find a cure for cancer.
15.	blind	He is blind to the faults of others.

WRITE ANOTHER SENTENCE FOR EACH OF THE VOCABULARY WORDS LISTED ABOVE.

WORD STUDY AND EVERYDAY WORDS EXERCISE

EVERYDAY WORDS: MONEY



1.	discount..........	a reduction in the original price
2.	interest	a rate paid for the use of money borrowed
3.	bargain	something sold at a lower price than usual
4.	loan	a sum of money lent at interest
5.	savings account ...	money saved in a bank, collecting interest
6.	installment	a regular payment on a purchase
7.	principal	amount of a debt
8.	credit.............	trust in one's ability to pay debt on time
9.	income tax	a tax on income
10.	application	a form filled out with certain personal facts when applying for a job, loan, etc.

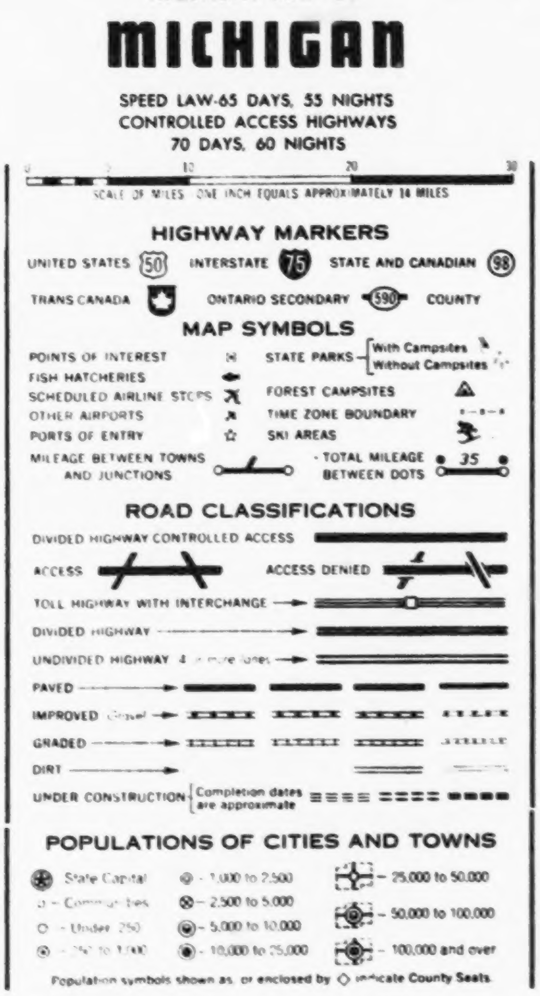
1. The salesman will discount the price of the item if you pay cash.
2. Interest must be paid on money borrowed.
3. You must shop carefully to find a bargain.
4. A loan is paid back with interest, so it must be paid promptly.
5. A savings account is a good way to keep your money safe.
6. On an installment plan, you must pay a certain amount on your debt at regular times.
7. The principal is the amount of money borrowed.
8. Good credit is kept by paying bills on time.
9. The government collects income tax on our wages.
10. Jerry filled out an application blank for a better job, giving his age, educational background, and work experience.

READ THE PARAGRAPH BELOW, AND FILL IN THE BLANKS WITH THE VOCABULARY WORDS GIVEN ABOVE.

John bought a car. He found a used car for $800. The dealer lowered the selling price and gave John a good ________________. He gave the dealer a $25 down payment and put the rest on an ________________ plan. He took some money from his ________________ ________________ at the bank. It was easy for John to borrow money because his ____________ was good. The total amount John borrowed is called the ________________. The money he paid to use money he borrowed is called the ____________

Unit 13

READING GRAPHS AND MAPS


HIGHWAY MAP OF
MICHIGAN
SPEED LAW-65 DAYS, 55 NIGHTS
CONTROLLED ACCESS HIGHWAYS
70 DAYS, 60 NIGHTS
0
10
20
30
SCALE OF MILES ONE INCH EQUALS APPROXIMATELY 14 MILES
HIGHWAY MARKERS
UNITED STATES 50
INTERSTATE 75
STATE AND CANADIAN 98
TRANS CANADA
ONTARIO SECONDARY 590
COUNTY
MAP SYMBOLS
POINTS OF INTEREST
FISH HATCHERIES
SCHEDULED AIRLINE STOPS
OTHER AIRPORTS
PORTS OF ENTRY
MILEAGE BETWEEN TOWNS AND JUNCTIONS
STATE PARKS
With Campsites
Without Campsites
FOREST CAMPSITES
TIME ZONE BOUNDARY
SKI AREAS
TOTAL MILEAGE BETWEEN DOTS
35
ROAD CLASSIFICATIONS
DIVIDED HIGHWAY CONTROLLED ACCESS
ACCESS
ACCESS DENIED
TOLL HIGHWAY WITH INTERCHANGE
DIVIDED HIGHWAY
UNDIVIDED HIGHWAY 4 or more lanes
PAVED
IMPROVED Gravel
GRADED
DIRT
UNDER CONSTRUCTION Completion dates are approximate
POPULATIONS OF CITIES AND TOWNS
State Capital
Communities
Under 250
250 to 1,000
1,000 to 2,500
2,500 to 5,000
5,000 to 10,000
10,000 to 25,000
25,000 to 50,000
50,000 to 100,000
100,000 and over
Population symbols shown as, or enclosed by ◇ indicate County Seats.

1. Does the P. H. Hoeft State Park have camp sites?
   Location A-1

   ____

2. Are there any divided highways on the map?

   ____

3. What is the mileage between Fairview and Curran?

   ____

4. Is there a U. S. Highway on the map?

   ____

5. Is there an interstate Highway on the map?

6. How many people live in Black River?
   Location 6-F

   ____

7. What is the speed law on most highways?

   Days? ______________________

   Nights? ______________________

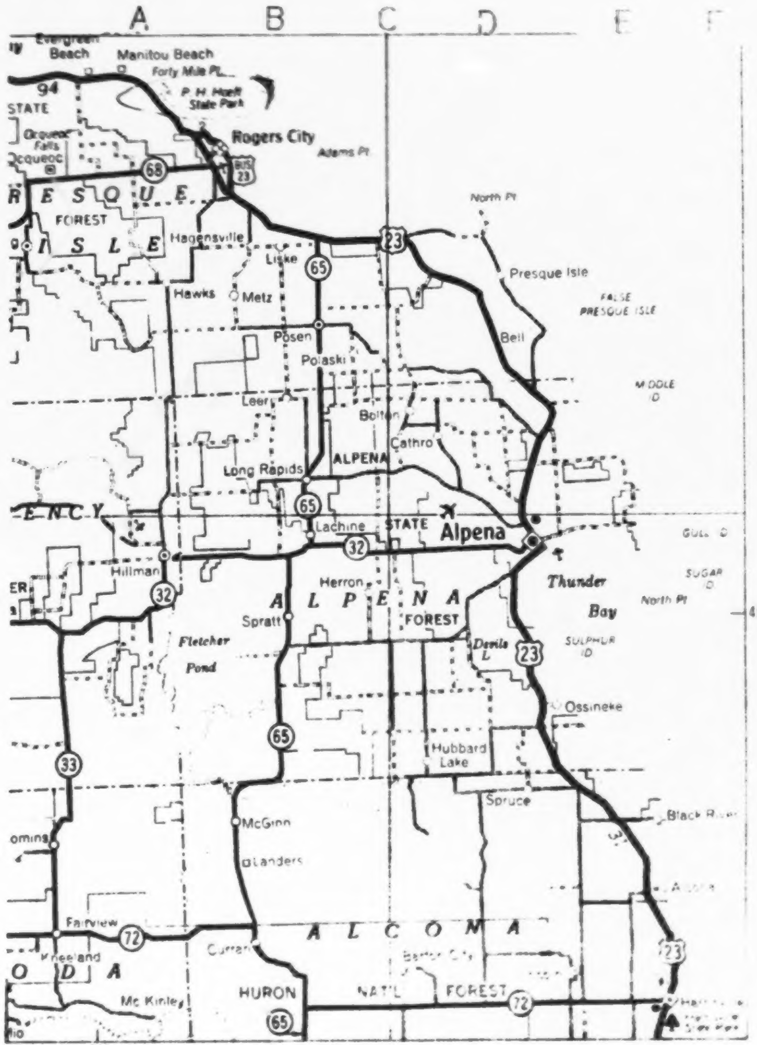
   On controlled access highways?

   Days? ______________________

   Nights? ______________________

8. About how many miles is it from Hillman to Alpena?

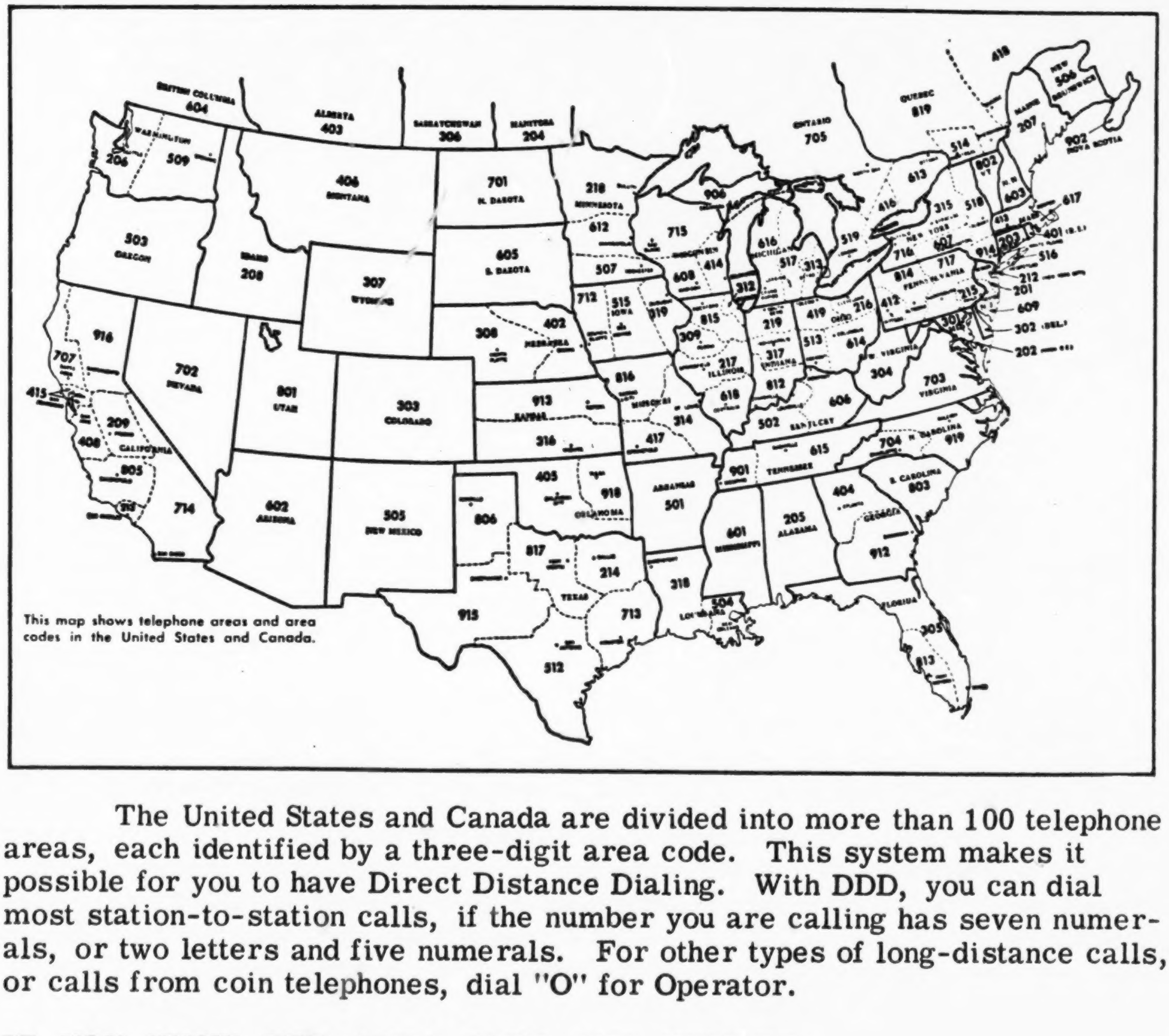
   ____


A
B
C
D
E
F
1
2
3
4
5
6
7
Evergreen Beach
Manitou Beach
Forty Mile Pt.
P. H. Hoeft State Park
STATE
Rogers City
Adams Pt.
Ocqueoc Falls
Ocqueoc
68
PRESQUE ISLE
FOREST
Hagensville
23
Lisk
65
Hawks
Metz
Posen
Pulaski
North Pt
Presque Isle
FALSE PRESQUE ISLE
Bell
MIDDLE ID
Leer
Bolton
Cathro
Long Rapids
ALPENA
65
Lachine
32
STATE
Alpena
Hillman
32
Herron
ALPENA FOREST
Spratt
Fletcher Pond
Thunder Bay
North Pt
SUGAR ID
SULPHUR ID
Devils L
23
45°
Ossineke
65
33
Hubbard Lake
Spruce
Black River
McGinn
Landers
Fairview
72
ALCONA
Curran
Barton City
Mc Kinley
HURON
NAT'L
FOREST
72
65
23
84°

READING AND AMERICAN SCENE EXERCISE

THE AMERICAN SCENE

LONG DISTANCE TELEPHONING


604
403
306
204
705
819
418
506
207
902
206
509
406
701
218
612
715
906
616
519
416
613
514
802
603
617
315
518
413
401
516
212
201
609
302
202
503
208
307
605
507
414
608
517
313
716
607
914
203
814
717
215
301
712
515
319
312
419
216
412
309
815
219
513
614
304
703
916
702
801
303
308
402
217
317
606
707
415
209
408
805
213
714
913
816
618
812
502
316
314
417
615
704
919
901
405
918
501
404
803
602
505
806
601
205
912
817
214
318
504
915
713
305
813
512
MONTANA
N. DAKOTA
S. DAKOTA
OREGON
IDAHO
WYOMING
NEVADA
UTAH
COLORADO
NEBRASKA
KANSAS
IOWA
MISSOURI
ILLINOIS
INDIANA
MINNESOTA
WISCONSIN
MICHIGAN
OHIO
KENTUCKY
TENNESSEE
W. VIRGINIA
VIRGINIA
N. CAROLINA
S. CAROLINA
GEORGIA
ALABAMA
MISSISSIPPI
LOUISIANA
ARKANSAS
OKLAHOMA
TEXAS
NEW MEXICO
ARIZONA
CALIFORNIA
FLORIDA
NEW YORK
PENNSYLVANIA
WASHINGTON
ONTARIO
QUEBEC
ALBERTA
BRITISH COLUMBIA
SASKATCHEWAN
MANITOBA
NOVA SCOTIA
NEW BRUNSWICK
MAINE

This map shows telephone areas and area codes in the United States and Canada.

The United States and Canada are divided into more than 100 telephone areas, each identified by a three-digit area code. This system makes it possible for you to have Direct Distance Dialing. With DDD, you can dial most station-to-station calls, if the number you are calling has seven numerals, or two letters and five numerals. For other types of long-distance calls, or calls from coin telephones, dial "O" for Operator.

IF YOU KNOW THE AREA CODE AND NUMBER...

1. ON DIRECT DISTANCE DIALING CALLS INSIDE THE CODE AREA:
   Dial 1 (This Access Code connects you with the Long Distance Dialing equipment) then the TELEPHONE NUMBER. Do not dial your area code. EXAMPLE: 1-CE-81631
2. ON CALLS OUTSIDE YOUR AREA CODE...
   Dial 1 (this Access Code connects you with the Long Distance dialing equipment) and then the appropriate AREA CODE AND THE TELEPHONE NUMBER. EXAMPLE: 1-313-CE-81631

STUDENT ASSIGNMENT EXERCISE

ASSIGNMENT: Read a magazine article, and write a review of it.

ASSIGNMENT: Cut out a news story and circle the verbs.

ASSIGNMENT: Write an article telling what you have learned about paragraphs in Units 10, 11, and 12.

COMPOSITION: WRITE A JOB RECOMMENDATION FOR YOURSELF.

WRITE A SENTENCE FOR EACH OF THE VOCABULARY WORDS LISTED IN UNIT 8.

WRITE A COMPOSITION ON "THINGS I LIKE ABOUT THIS CLASS."

APPENDIX D

SULLIVAN - *PROGRAMMED READING FOR ADULTS* *

BOOKS 3, 4, 5, 6, 7

COMPONENT PARTS

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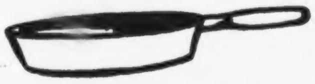
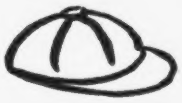
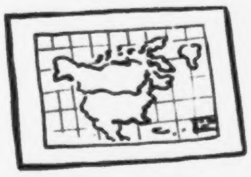
MATCHING WORDS AND PICTURES EXERCISE


a pan


a cap


a map

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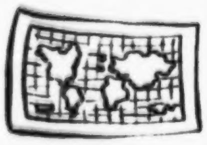

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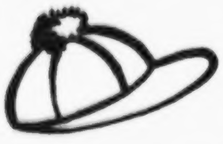

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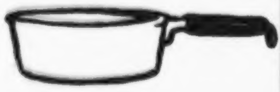

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map

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cap

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pan

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mat

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can

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man

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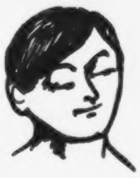
map

1.

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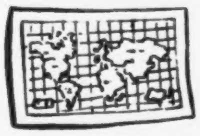

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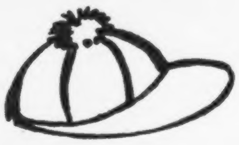
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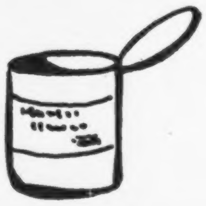

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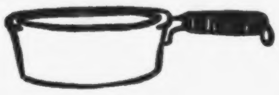
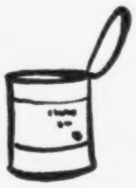

a pan


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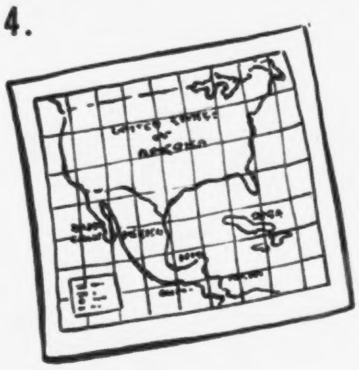
cap
a
map

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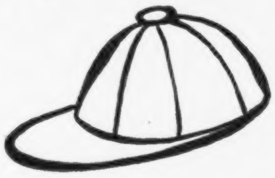
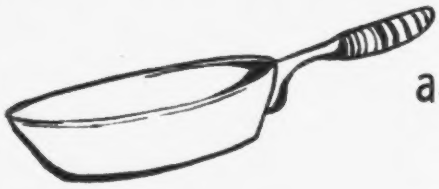
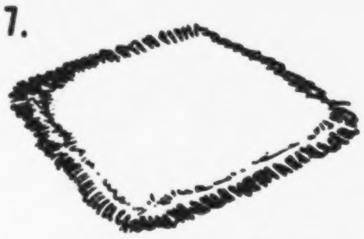
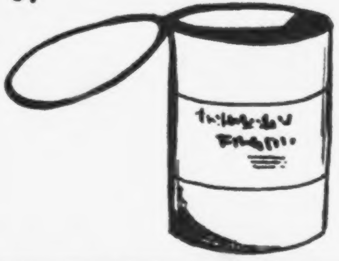

cat
a
cap

6.

man
a
pan

7.

mat
a
map

8.

can
a
cap

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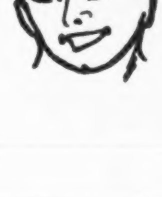
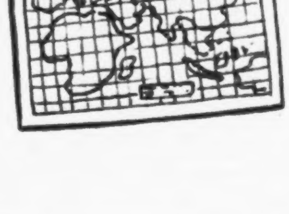

pan
a
man

10.

man
a
map

RHYME (SOUNDS LIKE) EXERCISE

1. pan

2. mat

3. cat

cap ~ map

1. fan ~ pa___

2. fat ~ ma___

3. bat ~ ca___

1. hat

2. ham

Pat

Pam

1. Pat ~ ham / hat

2. Pam ~ hat / ham

FILL IN THE MISSING LETTERS AND WORDS EXERCISE

1. map

2. pan

3. cap

4. man

5. can

6. map

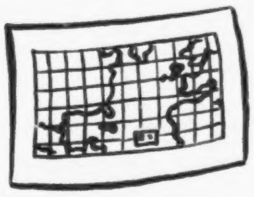
7. hat

8. bat

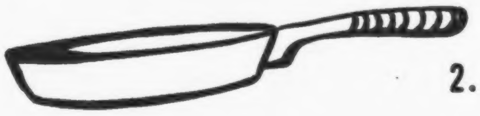
9. ham

10. cat

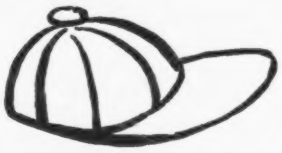
an	ap



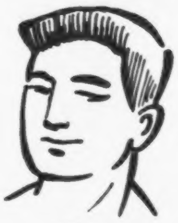
1. a m___



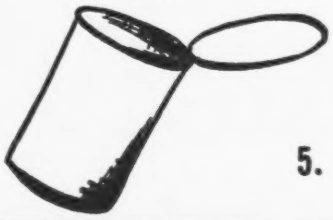
2. a p___



3. a c___

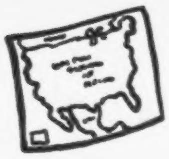


4. a m___

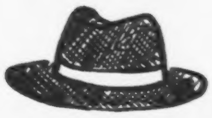


5. a c___

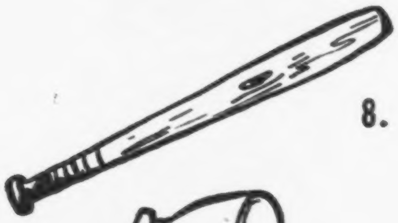
ham	hat	map	bat	cat



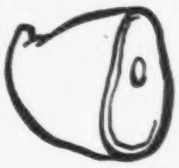
6. a _____



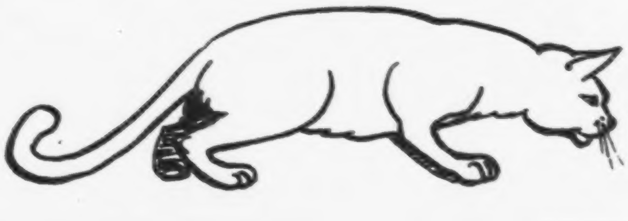
7. a _____



8. a _____



9. a _____



10. a _____

YES - NO QUESTIONS EXERCISE

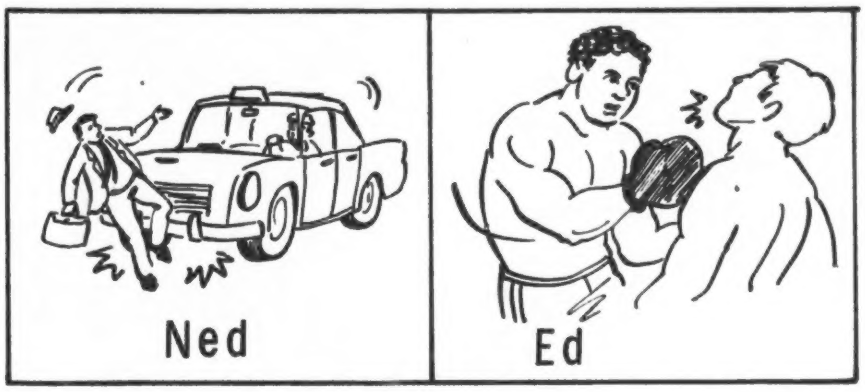
5. no

6. man

7. no

8. Ned

9. hit



yes
5. Did the cab hit a mat?
no

man.
6. It hit a
pan.

yes
7. Did the cab hit Ed?
no

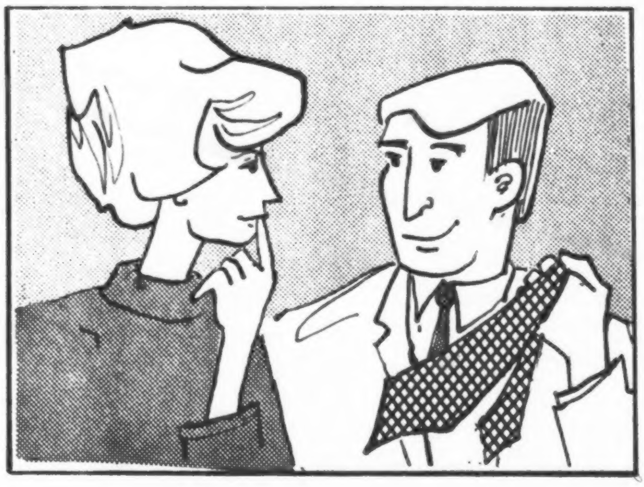
Ned.
8. It hit
Ed.

hit
9. Ed a man.
bit

ILLUSTRATION AND NARRATIVE EXERCISE

Ann Makes Up Her Mind

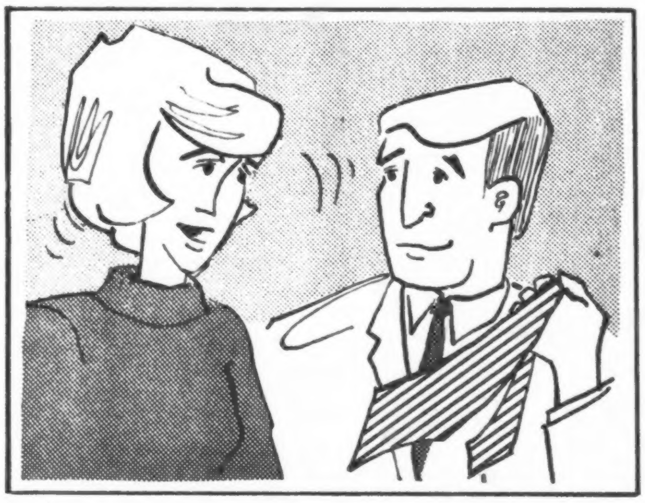
1. decide
2. tie
3. checks
4. salesman
5. stripes
6. husband
7. dark
8. so
9. mind
10. tie
11. no



1. Ann is trying to dec__de on a tie for Jack.

2. "This is a nice check," the salesman says, holding up a __ie.

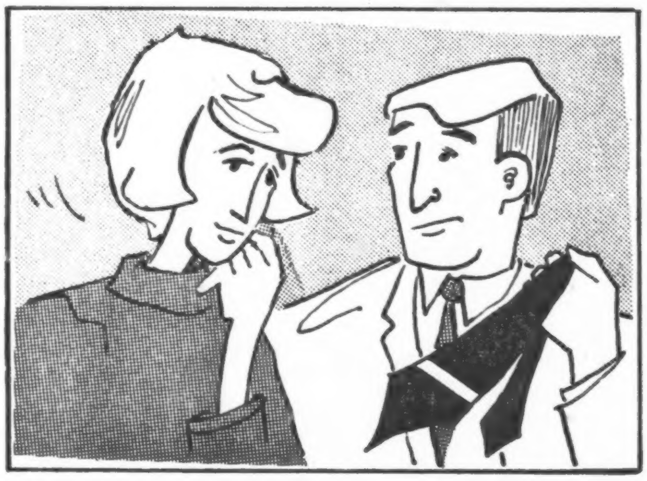
3. "My husband hates ch__cks," Ann says.



4. "I have lots of nice stripes," the s__lesman goes on.

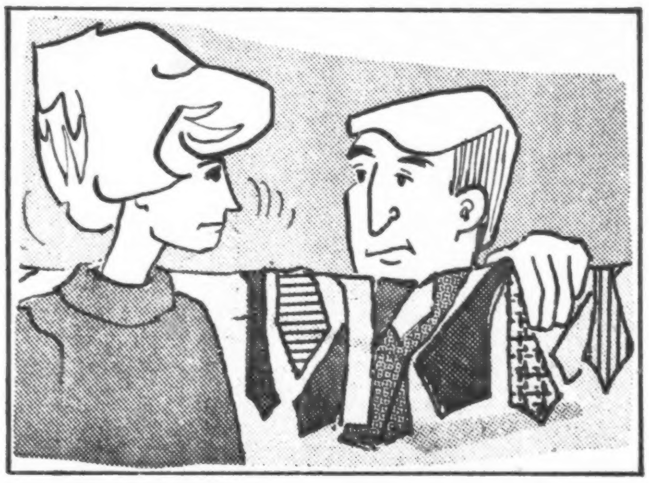
5. He holds up a red tie with white ____ripes. "Will this do?" he asks.

6. "I don't think so," Ann says. "My husb______ likes darker things."



7. "This is a nice d__rk tie," the salesman says. He holds up a black tie with a thin gold stripe.

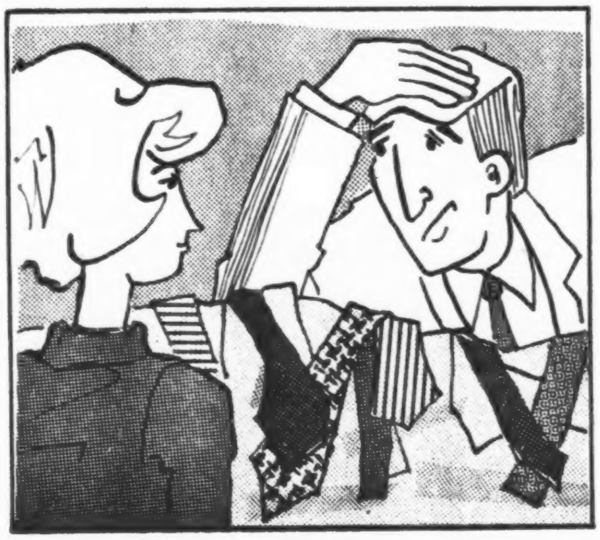
8. "Black is s__ dull," Ann says.



9. The salesman brings Ann all the ties in the store, but she still can't make up her m__nd.

10. Ann is shopping for a t____.

11. Has Ann decided on a tie?______



1. salesman

1. While Ann stands staring at the ties, the sales______ tries to think. At last he decides to take a chance. "Is it the ties you don't like," he asks, "or is it the price?"

2. price

2. "Well," Ann says, "since you've asked, I'll tell you. It's the pr__ce. The most I can spend is a dollar seventy-five. All your ties are more than that."

"Which tie do you like?" the salesman asks.

"The black tie with the gold stripe," Ann tells him.

Quickly the salesman folds up the tie and drops it into a box. "Sold for a dollar seventy-five," he says. "And what's more, if your husband isn't happy with it, he can exchange it."

"Thanks so much," Ann smiles. Then she pays for the tie and goes home.

3. chance

3. The salesman decided to take a ch________

4. price

size
4. Ann didn't like the price of the ties
shape

5. c

5. The salesman sold her a tie for

___a. a dollar.
___b. seventy-five cents.
___c. a dollar seventy-five.

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6. gold

6. Ann chose a black tie with a g______ stripe.

If Jack isn't happy with the tie, he can exchange it.

7. c

7. That is to say, he can

____a. get a better box for it.
____b. sell it for ten dollars.
____c. trade it for a tie he likes better.

The End